

RESOUREFUL MOCK 2018

S.4 LITERATURE 208/1

TIME: 2½ HOURS

INSTRUCTIONS TO CANDIDATES

- There are two sections: **A** and **B**. Answer **five** questions in all, covering **five** books, choosing **two** from section **A** and **three** from section **B**, **one** of which must be from the poetry book.
- In section **A** you must answer **one** question from sub –section **(i)** and **one** question from sub –section **(ii)**.
- You must cover **one play** and **one novel**.
- Any additional question(s) attempted will **not** be marked.

SECTION A

Sub –section (i)

Choose **one** of the passages 1 to 4, read it carefully and answer the questions following it as concisely as possible.

Either

1. FRANCIS IMBUGA: Betrayal In The City

JERE: Old people, you waste your time. There is to be no ceremony.

DOGA: Is it us you speak?

MULILI: No ceremony! That the final.

DOGA: A shaving ceremony is no child's play.

MULILI: Who you call child, eeh? Jere, you tell him. Tell him what I does with stubborn old mens.

JERE: The ceremony is cancelled in the interest of peace.

DOGA: In the interest of peace? Whose peace?

MULILI: We wants no anymore bloody bloodshed. We have seen enough. Just who you wants to murder next?

DOGA: Murder? Me? Young man, have you nothing to do with your time that you come and throw your weight about the grave of an innocent, harmless dead? And you young man, is this time to laugh?

JERE: We are on duty. We serve that nation.

MULILI: Repeat to them Jere, repeat. Tell them this grave no longer belong them.

NINA: You took our all, but you will not take the grave from us. If you do not go now, I shall strip and show you the poor naked bones you have left me. Do you want to be blinded by the nakedness of your grandmother's agemate?

JERE: No, we do not ask for blindness. You see, this friend of mine does not belong here. He doesn't know our ways.

DOGA: Then he should keep quiet instead of turning our hearts over and over.

MULILI: Big coward. Why you doesn't let her get on with it. How many naked body I have seen and I am still Mulili with my two eyes, natural? Look, no glass goggles.

DOGA: Let us forget he ever was born. Young man, the shape of your head even with that thing on is a familiar shape. Tell me, are you not Kaleka's son?

JERE: I am.

DOGA: Then listen to me. Your father and I shared the same knife at circumcision. What devil makes you look me in the face?

JERE: I do not look you in the face. I know the bitterness in your heart.

MULILI: Big coward. Jere, you a woman! *(They stare at him briefly.)*

JERE: Old man, if I had the power, I would let you go on. I would even take part in the ceremony. I knew Adika well.

DOGA: Do you know that even as we stand here, a stranger who hardly knew him lies in prison because of him?

MULILI: That no matter. He go against law and order. Tell us new thing or make clear out of here. You are trespasser.

DOGA: Empty words will be your downfall. May you die the way Adika did!

MULILI: Hey Jere, did you heard that? You tell him me I am man with action, not words. Come on tell.....

JERE: Shut up. *(Silence, then Mulili chuckles softly.)* Old man, do as I tell you for the moment. It's safer, look, this is the signed order.

NINA: Do not show us letters when you know well what you did to our eyes. You have blinded us, left us in darkness, and then as if that is not enough, you show us letters. Look young man, that is where our eyes are – under that mound.

MULILI: Your people full of primitive. Instead going to find how the other is, they comes and get stuck with dead one.

Questions

- a. What leads to this scene? [5mks]
- b. What is the character of Mulili as shown in the passage? [5mks]
- c. Give and explain any three themes shown in the passage. [6mks]
- d. What change comes over Jere shortly afterwards? [4mks]

Or

2. W. SHAKESPEARE: The Merchant Of Venice

BASSANIO: Shylock, do you hear?

SHYLOCK: I am debating of my present store,
And by the near guess of my memory
I can not instantly raise up the gross
Of full three thousand ducats. What of that?
Tubal, a wealthy Hebrew of my tribe,
Will furnish me. But soft, how many months
Do you desire? *(To Antonio)* Rest you fair, good signor!
Your worship was the last man in our mouths.

ANTONIO: Shylock, albeit I neither lend nor borrow

By taking nor by giving of excess,
 Yet to supply the ripe wants of my friend,
 I'll break a custom. (*To Bassanio*) Is he yet possessed
 How much ye would?

SHYLOCK: Ay, ay, three thousand ducats.

ANTONIO: And for three months.

SHYLOCK: I had forgot –three months, you told me so.
 Well then, you bond. And let me see; but hear you,
 Methoughts you said you neither lend or borrow
 Upon advantage.

ANTONIO: I do never use it.

SHYLOCK: When Jacob graze his uncle Laban's sheep –
 This Jacob from our holy Abram was,
 And his wise mother wrought in his behalf,
 The third possessor; ay, he was the third –

ANTONIO: And what of him? Did he take interest?

SHYLOCK: No, not take interest, not as you would say
 Directly interest. Mark what Jacob did:
 When Laban and himself were compromised
 That all the earnings which were streaked and pied
 Should fall as Jacob's hire, the ewes being rank,
 In end of autumn turned to the rams;
 And when the work of generation was
 Between these woolly breeders in the act,
 The skilful shepherd peeled me certain wands,
 And in the doing of the deed of kind
 He stuck them. Up before the fulsome ewes,
 Who then conceiving, did in eaning time
 Fall parti –coloured lambs, and those –were Jacob's.
 This was a way to thrive, and he was blest,
 And thrift is blessing if men steal it not.

ANTONIO: This was a venture, sir, that Jacob served for,
 A thing not in his power to bring to pass,
 But swayed and fashioned by the hand of heaven.
 Was this inserted to make inserted to make interest good?
 Or is your gold and silver ewes and rams?

SHYLOCK: I cannot tell, I make it breed as fast.
 But note me, signor

Questions:

- What circumstances lead to this scene? [5mks]
- Describe the character of Shylock as seen in the passage. [6mks]

- c. How does Shylock justify his charging of interest? [4mks]
- d. What happens shortly after the passage? [5mks]

Or

3. LAURY LAWRENCE OCEN: The Alien Woman

Obina was suffering from aching joints and general body weariness after a whole day of lectures when he came in to find a sealed envelope on his table. It was addressed to him in a neat slanting handwriting, and he wondered who could be writing to him at this time. It was from within the campus as the envelope had no Post Office stamp and proper address. Obina had of late feared the trend of this. He had discovered that this Margaret was crossing his path all too often. It was at the university that Obina first interacted with foreign women whose attitudes to men and sex were different. But Obina often nodded approval to himself when the thought 'I am so strict with my movements' came to mind. Obina wondered if Margaret was not somehow behaving out of balance. Take, for instance, the last two days when they stood on the faculty pavement. She had only discussed hints and clues which showed that she was interested in him. 'My mother would be pleased if you visited me at home.' 'My father is not all that bad as people say.' I dreamt that we were walking together holding hands in church,' and so on and so forth with these nasty utterances. Obina swallowed hard and rolled his eyeballs in their sockets like a deadly cobra which has sensed an enemy. It was true that this Margaret loved him, he no longer doubted it. It was also true that she was beautiful and could entice any man. 'But beauty in Bungatira is accorded the lowest point in the choice of a spouse. Those who choose by beauty in my motherland end up choosing wizards, stingy misers and harlots. These are the qualities sugar -coated by beauty.' Obina was furious and now talking loudly to himself. 'She does not know', he continued, 'that the mightiest ocean exists between me and her.....?' Obina stopped as there was the sound of footsteps. He checked his rear pocket, pulled out a blue handkerchief and wiped thin sweat off his brow. The walking sound passed. He got up quickly and locked the door from inside, and came back to sit with his right palm twined round his mouth. 'Now that letter,' he said pointing at the table with an angry fist. 'That letter must be from her. Let me see.' He made for the chair beside the table, sat down for a minute or two, staring blankly at the letter as if he suspected it to contain some fetish. He picked it up and carefully tore it open. His heart performed a brief kind of gymnastics. It jumped low and high, and again came low with a quick pulsation of fear and suspicion. It contained a very small note, and a beautiful photograph of Margaret. 'Which one is more beautiful, Margaret herself or the photograph?' He smiled sourly when he thought that his friend Omara could kiss such a photograph on its cheeks,

Questions

- a. Explain the circumstances that lead to this incident. [6mks]
- b. Describe the character of Margaret as revealed in the passage. [4mks]

- c. What does Obina mean when he says: "She does not know..... that the mightiest ocean exists between me and her.....?" [4mks]
- d. What happens shortly after the passage? [6mks]

Or

4. **MEJA MWANGI:** *Carcase For Hounds*

By the time the chief had got dressed and came out of his hut, rifle in hand, the home-guards were assembled on the parade compound. A too-silent corporal Njoro confronted the chief.

'Can I go now?' he asked.

The chief ignored the question and looked around at the dark forms in front of him. They were too few for a complete job. Just too few. 'Is everybody here?' he questioned. 'Only the gatekeepers are left at the gate,' Njoro reported. 'Go and bring them,' the chief ordered. 'And the gate?' the corporal asked. 'Bring them here,' the chief grunted. Corporal Njoro ran off into the dark night, heading for the gate. The other home-guards stood quietly shivering from the cold. Then a light drizzle started falling. The corporal came back heading a confused lot of gate guards. Then he approached the chief again.

'Chief, can I' he started to say.

The chief interrupted him.

'We need all of you on job,' he told the assembled home-guards. 'Terrorists have infiltrated into our village, our peaceful village. We are going to kill them; all of them. Every single one of them. They are in my father -in-law's house. Only a few of them: not more than ten.' He paused authoritatively. 'Here is the plan for attack.....'

As, he explained the plan, the chief was a changed man; now he was the great Chief Kahuru Wamai, the great Simba, the most feared and knowledgeable Simba. He unfold the plan of attack in great detail, ignoring the drizzle that was increasing every minute. At long last he finished the instructions.

One detail, led by a fearful Corporal Njoro, started out in a slightly different direction so as to approach the hut from the rear. The other platoon, the one to stage a frontal attack, was led by the chief himself. As they started out the misty drizzle was increasing rapidly and reducing visibility still further. But up to a few feet they could see clearly and recognize one another. They all wore the dark greatcoats that were distinguishably darker than the dark of the night. It was these too-dark greatcoats that gave them away to Haraka's sentries.

At the sound of the first gunshot. Chief Kahuru Simba ducked down, dug his head in the mud and stayed put. More shots sounded. Someone screamed near him. He closed his eyes and tried hard to sleep.

The home-guards found cover and exchanged a few wild shots with the sentries. The door to Mwaniki's hut was shut and no one came out. They watched the dark

entrance until they could not tell whether it was shut or open. Someone fired a shot at it. A woman's scream shattered the wet night.

Inside the hut Karaka glanced at the screaming woman. The shot had torn through the thin wooden door and hit her on the left shoulder. Dark blood spurted down her arm. A man tried to attend to her arm, but the hysterical woman moved all over the place, still in line with the thin wooden door.

Questions

- a. Explain what happens shortly before the above passage. [6mks]
- b. Describe the character of chief Simba and Corporal Njoro, as revealed in the passage. [6mks]
- c. What does chief Simba's strategy reveal about the conflict between the government and the terrorists? [4mks]
- d. How important is this incident in the novel? [4mks]

Sub –section (ii)

Answer **one** question in this section. If your answer in sub –section (i) was on a play now select a novel. But if your answer in sub –section (i) was on a novel you must now select a play.

FRANCIS IMBUGA: Betrayal In The City

Either

5. Explain why the government of Boss falls in the end. [20mks]

Or

6. What lessons do you learn from the play Betrayal In The City? [20mks]

Either

7. Describe the character of Shylock in the play The Merchant of Venice. [20mks]

Or

8. What role does Portia play in The Merchant of Venice? [20mks]

LAURY LAWRENCE OCEN: The Alien Woman

Either

9. Explain the merits and short comings of tradition in the novel The Alien Woman. [20mks]

Or

10. Compare the character of Opito and Obina. Who of the two appeals to you most? Give reasons. [20mks]

MEJA MWANGI: Carcase For Hounds

Either

11. How does the fall out between Haraka and Captain Kingsley influence events in the novel Carcase For Hounds? [20mks]

Or

12. Compare the military tactics of the Mau Mau to those of the colonial army.

[20mks]

SECTION B

Answer **three** questions covering three books, **one** of which must be on poetry.

NIKOLAI V. GOGOL: The Government Inspector

Either

13. How does Hlestakov succeed in fooling the town officials in The Government Inspector? [20mks]

Or

14. What role is played by Dob and Bob in the play The Government Inspector? [20]

MARY KAROORO OKURUT: The Curse Of The Sacred Cow

Either

15. Describe Nyabwangu's character and relationship with other members of the household. How does she contribute to the tragedy in the play? [20mks]

Or

16. What lessons do you learn from the play The curse Of The Sacred Cow? [20mks]

OKIYA O. OKOITI: Voice Of The People

Either

17. Referring closely to the play Voice Of The People, describe the character of Nasirumbi. [20mks]

Or

18. In which ways are the political issues in the play Voice Of The People similar to those in your country? [20mks]

DANIEL MENGARA: Mema

Either

19. What challenges do men face when one of their wives deserts her husband in the novel Mema? [20mks]

Or

20. What lessons do you learn from the novel Mema? [20mks]

BINWELL SHINYANGWE: A Cowrie of Hope

Either

21. "These were the nineties..... They were the years of each person for himself and hope only under the shadow of the gods."

How is this statement reflected in the events in the novel A Cowrie of Hope? [20]

Or

22. Describe the character of Nasula in the novel A Cowrie of Hope. [20mks]

DAVID RUBADIN: Growing Up With Poetry

Either

23. Read the poem below and answer the question which follow:

Gabriel Okara: *Once upon a Time*

One upon a time, son,
they used to laugh with their hearts
and laugh with their eyes:
but now they only laugh with their teeth,
while their ice-block-cold eyes
search behind my shadow.

There was a time indeed
they used to shake hands with their hearts:
but that's gone, son.
Now they shake hands without hearts:
while their left hands search
my empty pockets.

'Feel at home'! 'Come again':
they say, and when I come
again and feel
at home, once, twice,
there will be no thrice –
for then I find doors shut on me.

So I have learned many things, son.
I have learned to wear many faces
like dresses –homeface,
officeface, streetface, hostface, cocktailface,
with all their conforming smiles
like a fixed portrait smile.

And I have learned too
to laugh with only my teeth
and shake hands without my heart.
I have also learned to say, "Goodbye",
when I mean 'Good –riddance';
to say 'Glad to meet you',
without being glad; and to say 'It's been
nice talking to you', after being bored.

But believe me, son
I want to be what I used to be
when I was like you. I want to
unlearn all these muting things.
Most of all, I want to relearn

how to laugh, for my laugh in the mirror
shows only my teeth like a snake's bare fangs!

So show me, son,
how to laugh; show me how
I used to laugh and smile
Once upon a time when I was like you.

Gabriel Okara [Nigeria]

Questions

- a. Who are 'they' in the poem? [3mks]
- b. What complaints does the speaker make about 'they'? [5mks]
- c. What is the speaker's reaction to the behaviour of 'they'? [6mks]
- d. What do you find interesting about this poem? [6mks]

Or

24. Select a poem from *Growing Up With Poetry* on the theme of "village life" and use it to answer the following question:

- a. What is the title of the poem and name of the poet? [2mks]
- b. What does the poem say about village life? [6mks]
- c. What is your opinion about village life? [6mks]
- d. Why have you chosen this particular poem? [6mks]

A.D. AMATESHE: *An Anthology Of East African Poetry*

Either

25. Read the poem below and answer the questions that follow:

Conversation on African Names

My dear
I've been thinking
That we should name the baby –
like it used to be in our grandpa's time –
after somebody in our ethnic line, you know,
Because the child must have some identity
And not just Patrick Johnson,
David Stewberry, Peter Maclizzard, Charles shoemaker,
Kim Peking, Kennedy Dickson.....

You see
I know you value these English
Or, Christian names as they are often called,
But we do not want to lose our identity
like that!
God will not refuse you just because
you are called Ochieng Adala, or Wekesa Makesi
Or, let's put it this way,

Supposing you were born, say
One thousand years in the future,
And you went to the future museum
And picked a book
Written by some fellow by the name
'Bogus Crankshaft'
And on reading, you discovered later
that this was a real name of a famous
African philosopher, engineer, or whatever;
Wouldn't you wish
The man were called Mutali or Okello
Instead of some meaningless so-called Christian names
Bogus Crankshaft!

Dr. Everett Standa, Kenya

Questions

- a. Who is being addressed as 'My dear' in the poem? [3mks]
- b. What complaints about English names does the speaker make to 'My dear'? [6mks]
- c. Why would the speaker prefer African names? [6mks]
- d. In what ways does the poem appeal to you? [5mks]

Or

26. Select a poem from *An Anthology Of East African Poetry* part three, and answer the following questions:

- a. What is the title of the poem and name of the poet? [3mks]
- b. What is the poem about? [6mks]
- c. Why have you chosen this particular poem? [5mks]
- d. What does this poem tell you about East Africa? [6mks]

END

RESOUREFUL MOCK 2018

S.4 ENTREPRENEURSHIP

EDUCATION 845/1

TIME: 2½ hours

INSTRUCTIONS TO CANDIDATES

Answer **four** questions

Credit will be given for use of relevant diagrams and illustrations

Additional question(s) answered will not be marked.

1. You plan to start a carpentry project during your S.4 vacation.
 - a. List seven requirements you will need for your project. [7mks]
 - b. State any five effects of
 - i) Your business on the natural environment [5mks]
 - ii) A degraded environment on your business. [5mks]
 - c. Suggest eight measures you will undertake to reduce the harmful effects of the business on the natural environment. [8mks]

2. You had the following transactions for the month of February 2014:

		Shs
February 1	Balance brought forward:	
	Cash in hand	3,000,000
	Cash at bank	3,500,000
1	Deposited cash into bank	1,000,000
2	Bought goods cash	200,000
3	Bought furniture by cheque	300,000
7	Bought goods cash	400,000
8	Sold goods cash	500,000
10	Paid general expenses cash	60,000
14	Sold goods and was paid by cheque	370,000
18	Banked cash	400,000
20	Bought goods cash	300,000
21	Paid wages cash	80,000
22	Withdrew cash for personal use	90,000
23	Cashed cheque for office use	160,000
29	Banked cash	830,000

Required

- a. Prepare a Two Column Cashbook for the month. [21mks]
 - b. State four reasons why a bank may dishonor your cheque. [4mks]
3. You are operating a wholesale business in your community.
 - a. Write a business letter to a supplier requesting for purchase of goods on credit. [15mks]
 - b. Identify five sources from which you can establish the credit worthness of your customers. [5mks]

- c. State five ways of encouraging your customers to pay promptly. [5mks]
4. The following Trial Balance was extracted from the books of Bomboka & Sons as at 30th June 2014.

	Dr (Shs)	Cr (Shs)
Capital		60,000,000
Sales		201,000,000
Stock (1 st July, 2013)	9,000,000	
Purchases	127,800,000	
Drawings	27,000,000	
Lighting	5,700,000	
Loan (10 years)		33,000,000
Discount received		4,500,000
Rent	7,200,000	
Cash	1,200,000	
Interest received		1,500,000
Salary and wages	15,600,000	
General expenses	2,100,000	
Bank	3,600,000	
Carriage outwards	3,300,000	
Creditors		27,000,000
Premises	60,000,000	
Commission	6,000,000	
Debtors	36,000,000	
Furniture	22,500,000	
Total	327,000,000	327,000,000

Required: prepare;

- a. Trading, Profit and Loss Account for the year ended 30th June, 2014. [15mks]
- b. Balance Sheet as at 30th June, 2014. [10mks]
5. You are an entrepreneur trading in clothes. Your business is VAT registered.
- a. Name any four types of taxes, other than VAT that are paid by your business. [4mks]
- b. Explain six benefits your business enjoys by paying the taxes. [12mks]
- c. In the month of August 2014, you sold clothes that cost shs 1,500,000 to ZED Enterprises at shs 2,000,000. The transactions were VAT exclusive

Required: Use 18% VAT rate to calculate;

- i) VAT on purchases (input tax) [3mks]
- ii) VAT on sales (output tax) [3mks]
- iii) VAT you paid to Uganda Revenue Authority [3mks]

END

RESOUREFUL MOCK 2018

S.6 ENTREPRENUERSHIP

EDUCATION P230/3

TIME: 3 hours

INSTRUCTIONS

- This paper consists of **three** sections **A, B and C**
- Answer **four** questions only. All questions carry equal marks.
- Section **A** is compulsory. Answer any **three** questions from section **B** and **C**, choosing at least **one** from each section.
- Credit will be given for use of relevant diagrams and illustration
- Any additional question(s) will not be marked.

SECTION A: CASE STUDY

1. Read the case study below and answer the questions that follow.

Mukasa owns and operates MK hard ware shop strategically located in Mukono municipality. It is well stocked with plumbing materials, electrical equipment and general hardware tools.

Mukasa employs a cashier, two sales assistants, two casual labourers and two security guards. The workers are promptly paid their monthly salary and they are provided with lunch, transport and medical allowance.

Mukasa supervises the workers, orders and receives materials and authorities payment. He conducts in safe monitors the flow of stock, determines the re-order level and lead time and holds weekly meetings with workers.

Mukasa ensures that customers are satisfactorily serve. Regular customers receive credit and sometimes have their products delivered to their premises. As a result of constant advertising, the hardware has also attracted schools, churches and hospitals as its customers.

Due to the profits enjoyed by MK hardware shop, new entrepreneurs from the area have invited in similar businesses.

Questions

- a. How are the workers of MK hardware shop motivated? [4mks]
- b. Mention the management tasks performed by Mukasa in the business. [3mks]
- c. Identify the measures taken by Mukasa to control inventory in the business. [4mks]
- d. Explain the marketing strategies used by MK hardware shop. [6mks]
- e. Giving reasons for your answer, advise Mukasa on insurance policies that should be taken for the business. [4mks]
- f. Why may MK hardware shop be able to survive despite the competition from the new hardware shops in the area?

SECTION B: SCHOOL BUSINESS CLUB

*Answer at least **one** question from this section.*

2. In relation to the school business club project in which you participate.
 - a. Give the goals of the project. [4mks]
 - b. State the measures that are adopted to maximize the profits. [4mks]
 - c. Describe the marketing plan which is used by the business. [6mks]
 - d. Explain the measures that are taken to ensure proper management of inventory. [6mks]
 - e. What strategies are used to maintain a large market share amidst competition? [5mks]
3. Making reference to the school business project owned by your school project owned by your school business club;
 - a. Write a general description of the business project. [4mks]
 - b. Describe the steps you followed when starting the business. [5mks]
 - c. Describe the production process of the business project. [5mks]
 - d. Explain how the quality of the products of the business was managed. [6mks]
 - e. What skills did you gain from the school business project? [5mks]

SECTION C: FIELD ATTACHMENT/FIELD TRIP

4. For any business enterprise you were attached to:
 - a. Describe the nature of business. [5mks]
 - b. i) Name any two tools/equipment used in the business. [2mks]
ii) State the purpose of each of the equipment/tools named above. [2mks]
 - c. Explain the methods the business uses to manage its credit sales. [6mks]
 - d. What measure does the business use to ensure discipline of its employees? [6mks]
 - e. Outline the indicators of time wastage in the business. [5mks]
5. For any field work trip, you have carried out as an individual or a group:
 - a. What entrepreneurial competencies did you acquire from the firm you visited? [6mks]
 - b. State the objectives of the field trip. [2mks]
 - c. Make a SWOT analysis of the business you visited. [2mks]
 - d. How does the business you visited manage cash? [4mks]
 - e. i) What is the role of the business you visited to the local community? [3mks]
ii) How does the local community contribute to the success of the business you visited? [3mks]
 - f. Explain how the business you visited handles difficult customers. [4mks]

END

RESOUREFUL MOCK 2018

S.6 ENTREPRENEURSHIP

EDUCATION P230/1

TIME: 3 hours

INSTRUCTIONS TO CANDIDATES

*This question paper consists of **two** sections **A** and **B***

*Answer **five** questions only.*

*Section **A** is compulsory, answers to this section should be precise.*

*Answer **four** questions from section **B**.*

Credit will be given for use of relevant diagrams and illustrations.

Any additional question(s) attempted shall not be marked.

SECTION A

*Answer **all** questions in this section*

1. a) i. Distinguish between a balance sheet and an income statement. [2mks]
ii. Give any two reasons for record keeping for a business. [2mks]
b) i. What is entrepreneurial culture? [1mk]
ii. State any three ways of encouraging individuals to promote entrepreneurial culture. [3mks]
c) i. Differentiate between marketing and selling. [2mks]
ii. State any two factors that limit effective marketing of a product. [2mks]
d) i. Define the term sustainable development. [1mk]
ii. Mention any three social responsibilities of a business enterprise. [3mks]
e) Kansime's books of accounts had the following records.

	Shs
Stock on 1/1/2013	200,000
Purchases	480,000
Sales	820,000
Returns inwards	50,000
Stock on 31/12/2013	100,000

Determine:

- i) Cost of sales [2mks]
- ii) Turn over [2mks]

SECTION B

2. a) Explain the reasons why people in an organization may resist change. [10mks]
b) Suggest ways of promoting change in business. [10mks]
3. a) Under what circumstances may employees be paid different wages? [10mks]
b) What is the importance of training and developing workers in an organization? [10mks]

4. a) Why is it necessary to ensure proper management of inventory? [10mks]
b) Explain the factors considered when choosing suppliers of materials in business. [10mks]
5. a) Explain the benefits of collective investment schemes to entrepreneurs. [6mks]
b) What challenges are faced by the stock exchange market in your country? [14]
6. a) What challenges are faced by family businesses in Uganda? [10mks]
b) Suggest measures that should be taken to overcome the challenges of family businesses in Uganda. [10mks]
7. a) Explain the factors affecting tax compliance. [10mks]
b) What are the advantages of indirect taxes over direct taxes in Uganda? [10mks]

END

“Passing is both a qualitative and quantitative game”

RESOUREFUL MOCK 2018

S.4 ENTREPRENEURSHIP

EDUCATION 845/2

TIME: 2½ hours

INSTRUCTIONS TO CANDIDATES

Answer any **four** questions

Section **A** is compulsory. Answers to this section should be precise.

Answer **three** questions from section **B**.

Credit will be given for use of relevant diagrams and illustrations.

Additional question(s) answered will not be marked.

SECTION A [40 marks]

Answer **all** questions in this section

1. a) i. What is meant by the term price? [1mk]
ii. State any three factors that should be considered when determining the price of a product. [3mks]
b) Give any four reasons for carrying out a market survey. [4mks]
c) i. What is meant by a production plan? [1mk]
ii. Mention any three factors that should be considered when preparing a production plan. [3mks]
d) Distinguish between the following:
i) a standing order and a credit transfer [2mks]
ii) a bank draft and a traveller's cheque [2mks]
e) Mention any four advantages of using the imprest system of book-keeping. [4mks]
f) Give any four sources of capital for a business. [4mks]
g) i. Differentiate between retail trade and wholesale trade. [2mks]
ii. Mention any two benefits of retail trade businesses to the society. [2mks]
h) i. What is a valid business contract? [1mk]
ii. State any three conditions under which a business contract can be terminated. [3mks]
i) Give any four types of transport used in your country. [4mks]
j) i. Distinguish between a proposal form and a cover note as used in insurance. [2mks]
ii. State any two benefits of taking an insurance policy. [2mks]

SECTION B [60 marks]

Answer any **three** questions from this section

2. a) Explain the importance of packaging products. [12mks]
b) Outline the factors that should be considered when choosing the type of packaging materials. [8mks]
3. a) Explain the advantages of using a cheque as a means of payment. [8mks]

- b) Under what circumstances may a cheque be dishonoured by a bank? [12mks]
4. a) What are the benefits of establishing manufacturing business in your country? [10mks]
b) Explain the challenges faced by manufacturing businesses in your country. [10mks]
5. a) Describe the characteristics of a sole proprietorship business. [8mks]
b) Explain the advantages of a sole proprietorship business. [12mks]
6. a) Explain the importance of a business plan to an entrepreneur. [10mks]
b) Describe the steps taken when preparing a business plan. [10mks]

END

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RESOUREFUL MOCK 2018

S.6 ECONOMICS P220/2

TIME: 3 hours

INSTRUCTIONS TO CANDIDATES

Answer **five** questions only

Section **A** is compulsory. Answers to this section should be concise.

Answer any **four** questions from section **B**.

SECTION A [20 marks]

Answer **all** parts of this question

1. a) i. Distinguish between cross elasticity of demand and price elasticity of demand. [2mks]
ii. State two uses of cross elasticity of demand in your country. [2mks]
b) i. If the change in investment is \$500 billion and the marginal propensity to consumer is 60%, determine the final change in income in the economy. [2mks]
ii. Give two factors influencing operation of the investment multiplier in your country. [2mks]
c) Mention four arguments usually forwarded by workers when demanding for higher wages in your country. [4mks]
d) i. Differentiate between direct taxes and indirect taxes. [2mks]
ii. Outline two merits of direct taxes in your country. [2mks]
e) i. Define economic planning. [1mk]
ii. State three pre-requisites for success of economic planning in your country. [3mks]

SECTION B [80 marks]

2. a) Distinguish between an increase in demand and an increase in Quantity demanded. [4mks]
b) Explain the causes of an increase in demand in your country. [16mks]
3. a) Account for the income inequalities in your country. [10mks]
b) Examine the measures being used to reduce income inequalities in your country. [10mks]
4. a) Describe the structure of the agricultural sector in your country. [10mks]
b) Discuss the demerits of the structure of the agricultural sector in your country. [10mks]
5. a) Explain the solutions to unemployment according to J.M. Keynes. [6mks]
b) What are the limitations of the Keynesian theory of unemployment in your country? [14mks]
6. a) Examine the benefits of privatization of public enterprises in your country. [10mks]
b) Explain the problems arising from privatization of public enterprises in your country. [10mks]
7. a) Explain the tools of protectionism used in your country. [6mks]
b) Assess the impact of protectionism in your country. [16mks]

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S.6 PHYSICS P510/1

TIME: 2½ hours

INSTRUCTIONS TO CANDIDATES

Attempt not more than **five** questions including at least **one** but not more than **two** from each of the sections **A**, **B** and **C**.

Any additional question(s) answered will not be marked.

Where necessary, assume the following constants;

Acceleration due to gravity, g	=	9.81 ms^{-2}
Avogadro's number, N_A	=	$6.02 \times 10^{23} \text{ mol}^{-1}$
Density of water,	=	1000 kg m^{-3}
Electronic charge, e	=	$1.6 \times 10^{-19} \text{ C}$
Electronic mass	=	$9.11 \times 10^{-31} \text{ kg}$
Gas constant, R	=	8.31 J mol^{-1}
One electron volt, eV	=	$1.6 \times 10^{-19} \text{ J}$
Planck's constant, h	=	$6.6 \times 10^{-34} \text{ Js}$
Specific heat capacity of water	=	$4.2 \times 10^3 \text{ J Kg}^{-1} \text{ K}^{-1}$
Speed of light in Vacuum, c	=	$3.0 \times 10^8 \text{ ms}^{-1}$
Stefan's – Boltzmann's constant, δ	=	$6.67 \times 10^{-8} \text{ W m}^{-2} \text{ K}^{-4}$
Surface tension of water	=	$7.0 \times 10^{-2} \text{ N m}^{-1}$
Unified mass unit, U	=	$1.66 \times 10^{-27} \text{ kg}$
Universal gravitational constant, G	=	$6.67 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$

SECTION A

1. a) State the conditions for each of the following to be conserved
 - i) Linear momentum, [1mk]
 - ii) Mechanical energy of a body in motion [1mk]
 - b) i. State Newton's laws of motion. [3mks]
 - ii. A particle X of mass 100g initially moving with a speed of 10ms^{-1} to the East collides with particle Y of mass 200g moving at 15ms^{-1} to the South. After collision, X moves with a speed 5ms^{-1} on a bearing of 060° while Y moves with a speed V in the direction of S $(90 - \theta)^\circ$ E. Determine the values of V and Q . [5mks]
 - c) i. Define uniform acceleration and uniform deceleration. [2mks]
 - ii. Sketch a velocity time graph to show each of the motion in (c i). [2mks]
 - d) A particle is projected vertically upwards from the ground with a speed of 25ms^{-1}
 - i) Show that this particle is at a height of 21.7m above the ground two times. [3mks]
 - ii) Find the time between the instants when it is at this height. [3mks]
-
2. a) i. State Archimedes' principle. [1mk]

- ii. A piece of metal of mass 2.60g and density 8.4 g cm^{-3} is attached to a block of wax of mass 2.0g and density 0.92 g cm^{-3} . When the system is placed in a liquid, it floats with the wax just submerged. Find the density of the liquid. [4mks]
- b) Describe an experiment to determine the relative density of a solid that floats on water. [4mks]
- c) i. Define the coefficient of viscosity of a fluid and find its dimensions. [4mks]
 ii. Explain using the kinetic theory the effect on the viscosity of a liquid of reducing temperature. [2mks]
- d) i. Define static pressure and dynamic pressure. [2mks]
 ii. The static pressure in a horizontal pipe is $4.3 \times 10^4 \text{ Pa}$. The total pressure is $4.7 \times 10^4 \text{ Pa}$ and the area of cross-section is 20 cm^2 . If the fluid is of density $1.0 \times 10^3 \text{ gm}^{-3}$, calculate the flow velocity in the pipe. [3mks]
3. a) i. Define gravitational potential. [1mk]
 ii. What are the dimensions of the universal gravitational constant G ? [2mks]
 b) Sketch a graph of acceleration due to gravity against distance from the centre of the earth and give two reasons why g varies with location on the surface of the earth. [4mks]
 c) What is the speed of a satellite that orbits the earth at a height of 500km? How long does it take the satellite to make one revolution around the earth? [4mks]
 d) i. What is simple harmonic motion? [1mk]
 ii. Sketch a graph of variation of energy with displacement in S.H.M. [2mks]
 e) A particle performs S.H.M with an amplitude of 8.0cm and an angular frequency of 0.25 s^{-1} . At $t=0$, the velocity is 1.24 cm s^{-1} .
 i) Write down the equations for the displacement and velocity for this motion. [1mk]
 ii) Calculate the initial displacement. [2mks]
 iii) Calculate the first time at which the particle is at $x = 2.0 \text{ cm}$ and $x = -2 \text{ cm}$. [3mks]
4. a) i. State the principle of moments. [1mk]
 ii. Explain why it is necessary for a bicycle rider moving round a circular path to lean towards the centre of the path? [5mks]
 b) A mass of 4kg lies on a rough plane which is inclined at 30° to the horizontal. A light inextensible string has one end attached to the mass, passes down the line of the greatest slope, over a smooth pulley fixed at the top of the plane and carries a freely hanging mass of 1kg at its other end. The tension in the string is just sufficient to prevent the 4kg mass from sliding down the plane. Find coefficient of friction between the 4kg mass and the plane. [4mks]
 c) Explain why a vehicle moving with uniform speed at a roundabout has acceleration. [3mks]
 d) A small bob of mass 0.20kg is attached to an inextensible string of length 0.08m. The bob rotates in a horizontal circle of radius 0.40m. Find the:
 i) Linear speed of the bob [3mks]

- ii) Tension in the string [2mks]
- iii) Periodic time [2mks]

SECTION B

5. a) i. Define a thermometric property and give two examples. [2mks]
 ii. Explain briefly why two thermometers can give different values at the same temperature. [2mks]
 b) i. Describe how a celcius scale of temperature for a platinum resistance thermometer can be established. [3mks]
 ii. The resistance R_t of platinum wire at a temperature $t^\circ \text{C}$, measured on a gas scale is given by: $R_t = R_0 (1 + at + bt^2)$, where $a = 4.0 \times 10^{-3}$ and $b = -6.0 \times 10^{-7}$. What temperature will the platinum thermometer indicate when the temperature on the gas scale is 300° ?
 c) Describe with the aid of a labeled diagram, how the temperature of a furnace is measured. [6mks]
 d) A liquid of specific heat capacity $2.8 \times 10^3 \text{ J Kg}^{-1} \text{ K}^{-1}$ and specific latent heat of vaporization $9.0 \times 10^5 \text{ J Kg}^{-1}$ is contained in a flask of heat capacity 800 J K^{-1} at a temperature of 32°C . An electric heater rated 1 kw is immersed in 2.5 kg of the liquid and switched on for 12 minutes, calculate the amount of liquid that boils off given that the boiling point of the liquid is 80°C . [3mks]
6. a) i. State Boyle's law. [1mk]
 ii. Describe an experiment to verify Boyle's law. [5mks]
 b) i. State the assumptions made in the derivation of the expression, $P = \frac{1}{3} \rho c^2$. [3mks]
 ii. Use the expression in (b i) above to deduce the ideal gas equation. [4mks]
 c) i. Explain briefly what is meant by a reversible isothermal change. [2mks]
 ii. An ideal gas at 27°C and at a pressure of $1.01 \times 10^5 \text{ Pa}$ is compressed reversibly, and isothermally until its volume is halved. It is then expanded reversibly to twice its original volume. Calculate the final temperature and pressure of the gas. [Assume $\gamma = 1.4$] [5mks]
7. a) Define the terms radiation and black body radiation. [2mks]
 b) Describe how a black body can be approximated. [4mks]
 c) i. State Prevost's theory. [1mk]
 ii. A metal sphere of radius 45 mm with a black surface is at a temperature of 400 K . It is placed in an enclosure which is at a temperature of 600 K . Calculate the initial rate of temperature rise of the sphere assuming the sphere is a black body. [Density of metal sphere = 8000 kg m^{-3} , specific heat capacity of metal sphere = $4000 \text{ J kg}^{-1} \text{ K}$] [5mks]
 d) i. Explain briefly what is meant by green house effect? [2mks]
 ii. Explain the cause of global warming. [4mks]

- iii. Explain briefly what would happen if there were no greenhouse gases in the atmosphere. [2mks]

SECTION C

8. a) Define the following terms:
- i) Atomic number [1mk]
 - ii) Mass number [1mk]
 - iii) Isotopes [1mk]
- b) Describe the structure and action of G-M tube. [5mks]
- c) A source of which the half life is 130 days contains initially 1.0×10^{20} radioactive atoms and energy released per disintegration is 8.0×10^{-13} J. Calculate the:
- i) Activity of the source after 260 days have elapsed. [4mks]
 - ii) Total energy released during this period. [2mks]
- d) i. Sketch a graph of number of atoms present against time for a radioactive nuclide and use it to explain how the decay constant can be calculated. [4mks]
- ii. Explain briefly why the G-M tube has anode made of thin wire and some halogen vapour. [2mks]
9. a) i. Distinguish between x-rays and cathode rays. [2mks]
- ii. With the aid of a well labeled diagram, describe the structure and mode of operation of an x-ray tube. [6mks]
- iii. Sketch a graph of intensity against frequency of the radiation produced in an x-ray tube and explain its main features. [5mks]
- b) i. Explain the mechanism of thermionic emission. [2mks]
- ii. A beam of cathode rays is directed midway between two parallel metal plates of length 4.0×10^{-2} m and separation 1.0×10^{-2} m. The beam is deflected through 0.1 m on the screen placed 0.2 m beyond the nearest edge of the plates. When a p.d of 200 V is applied across the plates, the deflection is annulled by a magnetic field of flux density 1.14×10^{-4} T applied normal to the electric field between the plates, find the specific charge on the cathode rays. [5mks]
10. a) i. State the laws of photoelectric emission. [4mks]
- ii. Explain why the wave theory of light fails to account for the photoelectric effect. [5mks]
- b) A freshly cleaned zinc plate is placed on the cap of a negatively charged gold leaf electroscope. Infrared radiation of very high intensity is directed on the zinc plate.
- i) State what is observed [1mk]
 - ii) Explain the observation in (b i) [3mks]
- c) i. Define work function and stopping potential. [2mks]
- ii. Show that the total energy of an electron orbit in the n^{th} state is $E_n \propto \frac{1}{n^2}$ [5mks]

RESOUREFUL MOCK 2018
Uganda Advanced Certificate of Education
APPLIED MATHEMATICS
Paper 2
3 hours

- Attempt **all** the **eight** questions in section **A** and **five** questions from section **B**.
- Begin each answer on a fresh sheet of paper.
- Mathematical tables with list of formulae and squared papers are provided.
- In numerical work take g to be 9.8ms^{-2} .
- State the degree of accuracy at the end of each answer attempted using calculator or tables and indicate cal for calculator or Tab for mathematical tables.

SECTION A

1. An electric spring of natural length 0.5m is stretched by 0.1m by a force of 25N.
Find
 - i) The modulus of elasticity
 - ii) Extension when a force of 20N is applied.
 - iii) The tension in the spring when the extension is 35cm.
2. The probability that Bob wins a tennis game is $\frac{2}{3}$. He plays 8 games, what is the probability that he wins
 - i) At least 7 games
 - ii) Exactly 5 games
3. The table below shows the distribution of marks gained by a group of students in a Mathematics test marked out of 50.

Marks	Frequency
1 – 10	15
11 – 20	20
21 – 30	32
31 – 40	26
41 – 50	7

Plot an O give for the data and use it to estimate the median mark and semi-interquartile range.

4. A carton of mass 0.4kg is thrown across a table with a velocity of 25ms^{-1} . The resistance of the table it's motion is 50N. How far will it travel before coming to rest? What must be the resistance if it travels only 2 meters?

5. Two boxes P and Q contain white and brown cards. P contains 6 white cards and 4 brown cards, Q contains 2 white and 3 brown cards. A box is selected at random. Find the probability that;
 - i) A brown card is selected
 - ii) Box Q is selected given that the card is white
6. The charges of sending Parcels by a certain distributing company depends on the weight of the parcels of weight 500g, 1.5kg, 2kg, 3kg. The charges are 750/-, 1000/-, 2000/- and 4000/- respectively; Determine
 - i) Weight of the parcel sent if the sender paid 6200/-
 - ii) What should the distributor charge for a parcel of 200gm
7. In a world cup 76% of the spectators on a particular day were supporting Norway. A random of 1600 spectators were selected. Find the probability that at least 420 spectators were not supporting Norway.
8. ABCD is a square of side x. Forces of magnitude 2N, 1N, $\sqrt{2}$ N and 4N act along AB, BC, AC and DA respectively. The directions being in the order of letters. Find the magnitude and direction of the resultant force.

SECTION B

9. a) Show that the Newton raphson iterative formula for solving the equation $2x^2 - 6x - 3 = 0$ is $X_{n+1} = \frac{2X_n^2 + 3}{4X_n - 6}$ for $n = 1, 2, 3, \dots$
 - b) Show also that the positive root for $2X^2 - 6x - 3 = 0$ lies between $X = 3$ and $X = 4$, taking $X_0 = 3$ as the first approximation, find the root correct to two decimal places.
10. a) A particle is projected out of the sea with a velocity of 49ms^{-1} from a top of a cliff 98m high at an angle of 30° with the horizontal. Find how far from the bottom of the cliff a particle reach the water.
 - b) A ball is projected from a point on the ground distance a from the foot of a vertical wall of height b , the velocity of projection V at an angle α to the horizontal. Find how high above the wall the ball passes it, if the ball just clears the wall, prove that the greatest height reached is $\frac{a^2 \tan^2 \alpha}{4 (a \tan \alpha - b)}$
11. The table below shows the marks scored in General paper by some students in mock examination from a certain school.

Marks	Number of students
31 – 40	12
41 – 50	18
51 – 60	14
61 – 70	8
71 – 80	6
81 – 90	2

- a. i) Draw a histogram to represent the scores.
ii. From your histogram estimate the mode.
 - b. Calculate the mean, median and standard deviation.
12. A total population of 700 students sat an examination for which the pass mark was 50. The marks were normally distributed, 28 students scored below 40 marks while 30 scored above 60.
- a. Find the mean mark and standard deviation of the students.
 - b. What is the probability that a student chosen at random passed the examination?
 - c. Suppose the pass mark is lowered by 2 marks, how many more students will pass?
13. a) A metallic arrow of mass 80g moving with velocity 240ms^{-1} hits a wooden trolley of mass 9.92kg moving with speed of 0.5ms^{-1} in the same direction as the arrow. If the arrow gets embedded in the trolley and the two move together, calculate
- i) the common velocity of two bodies
 - ii) the impulse each body receives
- b) A shot of mass m is fired from a gun of mass M placed on a smooth horizontal plane inclined at an angle α to the horizontal. If V is the velocity of gun's recoil at an instant when the shot leaves, prove that the horizontal component of the resultant repulsive pressure of the shot is MV and that the component at right angles to the gun's length is $mvsin\alpha$. It's assumed in each case that the repulsive pressure is resolved between two components at right angles. Prove that the initial direction of the gun's motion is achieved at $\tan^{-1}\left[\left(1 + \frac{m}{M}\tan\alpha\right)\right]$ to the horizontal.
14. a) When $X=0.8$, $e^X = 2.2255$ and $e^{-X} = 0.4493$ correct to 4 decimal places.
- i) Round off the values of e^X and e^{-X} to 2 decimal places.
 - ii) Truncate the values of e^X and e^{-X} to 2 decimal places.
 - iii) If the maximum possible error in the values e^X and e^{-X} is ± 0.00005 , what are the corresponding maximum and minimum values of the quotient e^X/e^{-X} ? Give your answers to 3 decimal places.
- b) Show that the iterative formula for solving the equation $X^3 = x + 1$ is $X_{n+1} = \sqrt[3]{1 + \frac{1}{X_n}}$ starting with $X_0 = 1$, find the solution of the equation to four significant figures. Draw a flow chart that computes and prints the root of the equation.
15. a) A mass of 2kg freely suspended from a spring of natural length 75cm and $\lambda = 6\text{g N}$, the other end up is fixed to a point A. A body initially hangs freely in equilibrium at point B. It is then pulled down a further distance 25cm to point C and released from rest. Find
- a. The distance AB

- b. The energy stored in the spring when a body rests at B.
 - c. Energy stored in the spring when the body is held at C.
 - d. Kinetic energy when it passes through B to C
16. A block of mass 10kg accelerates at 2.13ms^{-2} down a rough plane AB inclined at 20° to the horizontal when a force F acting parallel to and down the plane is applied to it. If B is 4m vertically above A and co-efficient of friction between the plane and the block is 0.312. Find
- i) Magnitude of F
 - ii) Work done by force F in moving from B to A
- b) A car of mass 1200kg has a maximum power of 15 watts and a maximum speed of 1200Km h^{-1} . If the car is travelling on a horizontal road.
- i) Calculate the total resistance to the motion of the car
 - ii) Maximum acceleration in meters per second when the car moves at 50Km h^{-1}

END

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RESOUREFUL MOCK 2018

S.6 GRAPHICS P615/3

TIME: 4 HOURS

*Choose only **one** question*

1. In a space of 23cm x 15cm, design a book cover whose title is **A family planning**. The book has a spine of 2cm. Use black, Red and any other colour of your choice. The book is written by **Bob Dob** and published by **Maria Sera Press Ltd**. It is the **first edition**.
2. Design a logo for a new juice drink soon to be on market, its name is to be **“ORK JUICE”** and its juice is extracted from Mangoes, Oranges, Guava etc. Dimension is 17cm x 17cm and in only three colours.
3. Make a poster for an out break of a dangerous killer disease called **“Abola”**. The poster should be warning the society to be vigilant and keep every thing they use and where they live clean, they should avoid contact with affect patients. Use not more than 3 colours and in a space of 30cm x 25cm.
4. Design a wall calendar for **Kitoko Distillers Ltd** a company which process Acoholic drinks, for the month of July 2017 having 19th and 23rd as their public holidays and starting on Tuesday. Do not use more than three colours.

END

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S.6 STUDIO TECHNOLOGY P615/4
TIME: 2 HOURS

*Attempt **all** questions*

1. Using illustrations, explain 5 elements of Art and crafts. [5mks]
2. List down four qualities of a good calendar. [4mks]
3. Differentiate between 2Dimensional and 3Dimensional works. [2mks]
4. a) Explain the steps taken in production of a mask. [6mks]
b) List three functions of a mask. [3mks]
5. a) Give the difference between Tie & dye and printing. [2mks]
b) List down three materials used in Tie & dye. [3mks]
6. a) Describe the process of clay preparation for pottery. [6mks]
b) Define the following terms [4mks]
 - i) Grog
 - ii) Slip
 - iii) Green ware
 - iv) Terracotta
7. Give two types of sculptures. [2mks]
8. With the help of illustration, explain the weaving terms. [6mks]
9. a) Define the term Tanning as in leather. [1mk]
b) List down three tools for leather work. [3mks]
10. Give any three tools used in Calligraphic work. [3mks]

END

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S.6 IMAGINATIVE COMPOSITION IN COLOUR
TIME: 3 HOURS

*Attempt **one** question*
Use only three colours

1. A water crisis
2. An elderly person emphasizes a point in a meeting.
3. I am Innocent!
4. A pilgrim equips for a days long journey
5. A preacher at the pulpit
6. Ruthless armed robbers
7. In a hospital ward under intensive care.
8. A dance at its climax.

END

RESOUREFUL MOCK 201
S.6 IMAGINATIVE COMPOSITION IN COLOUR
TIME: 3 HOURS

*Attempt **one** question*
Use only three colours

1. A water crisis
2. An elderly person emphasizes a point in a meeting.
3. I am Innocent!
4. A pilgrim equips for a days long journey
5. A preacher at the pulpit
6. Ruthless armed robbers
7. In a hospital ward under intensive care.
8. A dance at its climax.

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RESOUREFUL MOCK 2018
S.6 DRAWING FROM NATURE

AND STILL LIFE P615/1

TIME: 2½ HOURS

*Choose on **one** question*

ALTERNATIVE A

1. On a low plat form against the wall, place a medium sized charcoal stove approximately 30cm in diameter. On top of the charcoal stove, place a frying pan whose diameter is approximately 25cm. The inside of the frying pan should directly face the candidates so that its handle leans against the wall.

On the left side of the setter, but in front of the charcoal stove, place 2kg sealed packet of baking flour in a $\frac{3}{4}$ view.

On the right side of the setter, but in front of the charcoal stove, place a chapatti wooden rolling board of approximately 30cm in diameter in an upright position but leaning in a $\frac{3}{4}$ view against the charcoal stove.

Between the 2kg flour packet and the chapatti rolling board, place a cylindrical wooden roller approximately 27cm long such that it faces the candidates at a $\frac{3}{4}$ view.

ALTERNATIVE B

Make a study or study of a mature cockroach.

Or

Make a study or studies of a feather from the wing of a mature cock.

END

Printed

TIME: 2 HOURS

*Attempt **all** questions*

1. a) Define the term line as in Arts & Crafts. [1mk]
b) State four functions of line in Visual art. [4mks]
2. List four different materials that are used in textile Design. [2mks]
3. Mention three materials used in Tie and Dye and Batik. [3mks]
4. Define the following [6mks]
 - a. Squeegee
 - b. Design
 - c. Motif
5. a) What is clay?
b) Describe the technique used in pottery production. [5mks]
6. a) What is Papier Mache? [1mk]
b) Describe the process of making a mask. [8mks]
7. With illustrations write the meaning of the following terms. [5mks]
 - a. Warp
 - b. Weft
 - c. Shed
 - d. Draft
 - e. Pick
8. Write short notes of the following [3mks]
 - i) Collage
 - ii) Mosaic
 - iii) Sculptureb) Briefly explain two types of sculptures. [3mks]
9. List four materials required in making Batik. [2mks]
10. Mention five functions of Crafts to your community. [5mks]

END

PRINTED

INSTRUCTIONS

*Attempt only **one** question*

Enter with all your necessary materials needed.

1. Make a design for a poster to advertise a fashion show of Ugandan cultural wear that will feature designers; Esther Nangobi and Swabra Nalule. The show is slated for the 27 of August 2016 at the National Theatre starting at 6: 00pm.

Charges will be 10,000/=

The show theme is “My Heritage”

Use at least two colours.

2. In a space of 28cm x 35cm and not using more than three colours design a menu card for Bon –Apetit Restaurant with a list of the following items served.

Meat stew	2,625/=
Rice	3,235/=
Yoghurt	1,750/=
French toss	3,000/=
Chicken	5,560/=
Meat vergdera	3,420/=
Corn dog	2,620/=
Humberg	3,725/=
Pizza	6,750/=
Irish potatoes	3,350/=

3. Design a book cover for a book entitled “**Crazy world**” by Carol J and published by **ORIZON publishers**. Use an area of 20cm x 30cm and only three colours.

END

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**S.4 DRAWING FROM NATURE
AND STILL LIFE 612/2 [IPS]
TIME: 2½ HOURS**

*Choose **one** alternative*

ALTERNATIVE A

On the floor, slightly away from the wall, place a cylindrical round – based wooden mortar, about 45cm high, in a vertical position.

Inside the centre of the wooden mortar, place a wooden pestle which is about 60cm long. Make the wooden pestle to lean on the edge of the right side of the mortar, towards the wall.

Slightly in front of the mortar, but to the right side of the mortar, arrange three stones (each approximately 10cm high) in an equilateral triangle formation.

On top of these three stones, place a traditional earthen pot whose circumference, at its widest is about 63cm or about 20cm in diameter, and whose height measures about 30cm.

To the left, but slightly in front of the base of the mortar, place around, medium sized pumpkin (about 60cm in circumference at its widest point) such that its short stalk turns to the right of the mortar.

ALTERNATIVE B

A low wide stool, of about 70cm x 70cm surface area and 50cm high, is placed directly facing the candidates.

On top of this wide stool, place a plastic basin whose rim diameter is approximately 45cm.

A towel (measuring 60cm x 80cm) is placed in the basin, on the left side, so that part of the towel hangs down the left side of the basin to create folds. These folds should slightly cover part of the basin and the left edge of the wide stool.

A new bar of soap leans in a ¾ view on the right side of the basin as one end rests on the surface of the stool.

Candidates draw the entire composition.

ALTERNATIVE C

Make study or studies of a mature wasp.

END

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*Attempt **one** question*

Use only three colours

1. The cattle in the garden feasted on every crop.
2. Visitors at the place of the King.
3. Children playing
4. A thrilling traditional dance
5. Inspecting a guard of honour by the chief guest.
6. Emphasizing a point
7. On my God! This is too good to be true!
8. A school disciplinary committee at work

END

RESOUREFUL MOCK 2018

S.4 IMAGINATIVE COMPOSITION IN COLOUR

TIME: 3 HOURS

*Attempt **one** question*

Use only three colours

1. The cattle in the garden feasted on every crop.
2. Visitors at the place of the King.
3. Children playing
4. A thrilling traditional dance
5. Inspecting a guard of honour by the chief guest.
6. Emphasizing a point
7. On my God! This is too good to be true!
8. A school disciplinary committee at work

END RINTED

RESOUREFUL MOCK 2018

S.6 GEOGRAPHY P250/2

[WORLD PROBLEMS & DEVELOPMENT]

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATES

- Answer **four** questions in all
- Section **A** is compulsory
- Answer **three** questions from section **B**
- Credit will be given for the use of relevant sketch maps and diagrams.

SECTION A

1. Study the table below showing power and energy sources for selected countries and answer the questions that follow;

Country	Energy production (kwh)	HEP (%)	Coal	Oil (%)	Natural gas (%)	Nuclear power (%)
China	1,350	16.0	78.0	4.0	1.0	1.0
Switzerland	66	56.0	00.0	1.0	2.0	41.0
Egypt	75	18.7	00.0	16.1	65.2	00.0
USA	4,000	6.0	54.0	3.0	17.0	20.0

- a. Draw a compound divided rectangle to represent the information given in the table. [10mks]
- b. Outline the advantages and disadvantages of using the statistical method in (a) above. [4mks]
- c. Identify the countries with the;
- i) Highest natural gas production
 - ii) Lowest Nuclear power production
 - iii) Highest energy production
 - iv) Lowest coal production [4mks]
- d. Explain the role of power and energy in the development of any one country given in the table. [7mks]

SECTION B

2. a) Distinguish between Intensive farming and Extensive farming. [10mks]
b) Assess the contribution of market gardening to the development of any one state in USA. [15mks]
3. a) Account for the destruction of forests in tropical Africa. [15mks]
b) Outline the effects of deforestation on the environment in tropical Africa. [10mks]
4. Examine the role of the transport sector in either Zambia or South Africa.
5. To what extent has low level of technology limited the development of fishing in either Angola or Peru? [25mks]
6. Explain the contribution of the St. Lawrence Seaway to the development of either USA or Canada. [25mks]

7. Assess the contribution of the tourist industry to the development of either Switzerland or Egypt. [25mks]
8. To what extent has industrialization contributed to environmental pollution in either the Ruhr region of Germany or the Great Lakes region of USA? [25mks]

END

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INSTRUCTIONS

Answer **four** questions from part **I** and **two** from part **II**

In part **II**, only **one** question **must** be chosen from any **one** region.

Any additional question(s) will not be marked.

PART I: THE REST OF AFRICA

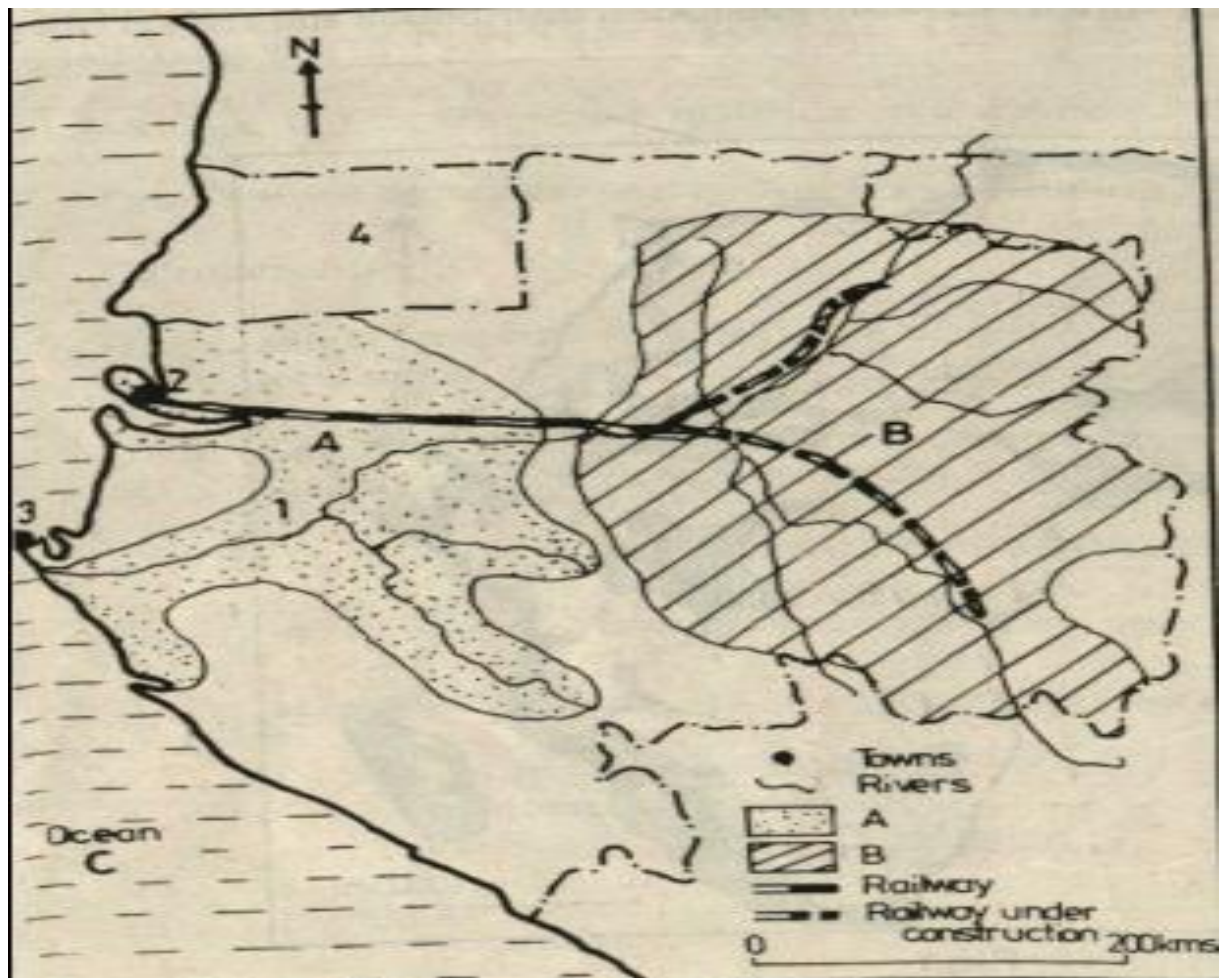
1. Study the table below showing the climate of Durban, Natal province, Republic of South Africa and answer the questions that follow:

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temp (°C)	25	26	24	22	20	17	17	18	19	21	23	24
Rainfall (mm)	112	125	135	85	50	25	25	37	75	125	125	125

Source: Minns, W, J. A Geography of Africa, New Edition P. 39

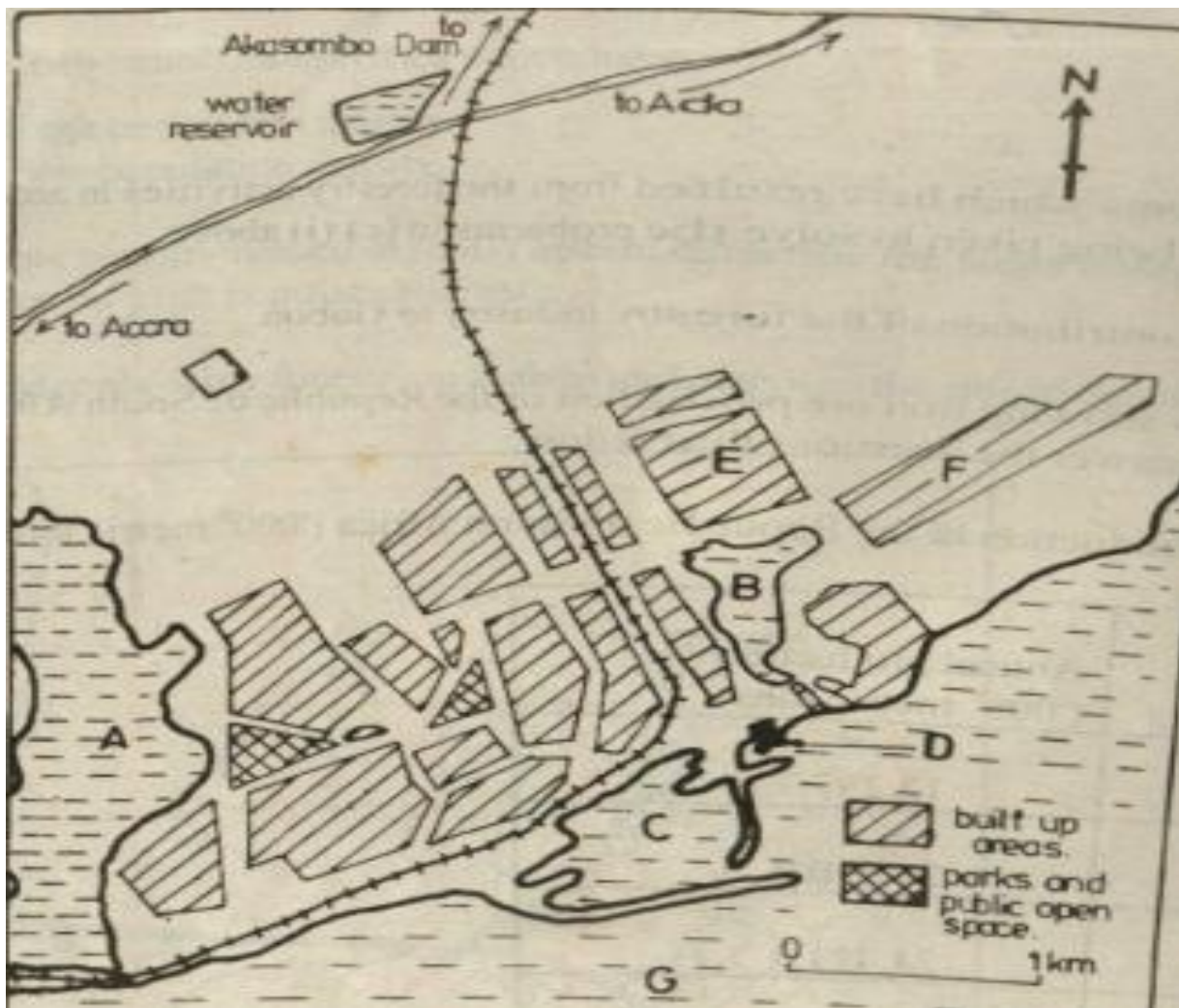
- a. Draw a suitable diagram to represent the information in the table. [9mks]
 - b. Calculate:
 - i) Annual temperature range [1mk]
 - ii) Total annual rainfall [1mk]
 - c. i) Identify the relationship between temperature and rainfall at the station. [2mks]
ii. Describe the factors responsible for the relationship described in (c i) above. [6mks]
 - d. Explain the effect of climate on agricultural activities in the Natal province. [6mks]
2. a) Draw a sketch map of Africa and on it, mark and name the;
- i) Vegetation types
 - Equatorial rain forests
 - Mediterranean vegetation
 - The Sahel/semi –arid vegetation
 - ii) Latitudes
 - Equator
 - Tropic of cancer,
 - Tropic of Capricorn. [7mks]
- b) Describe the characteristics of the;
- i) Mediterranean vegetation [3mks]
 - ii) Sahel/semi –arid vegetation [3mks]
- c) Explain the;
- i) Economic activities carried out by the people living in the Sahel region. [3mks]
 - ii) Problems faced by people living in the Sahel region. [4mks]
- d) For any one country in the Sahel region, outline the steps being taken to solve the problems identified in (c ii) above. [5mks]

3. Study the map showing forestry in Gabon and answer the questions that follow;



- a. Name the;
 - i) River marked 1
 - ii) Towns marked 2 and 3
 - iii) Ocean marked C
 - iv) Country marked 4
 - v) Forest regions marked A and B [7mks]
- b. Describe the factors that have favoured the development of forestry activities in the area marked A. [6mks]
- c. Explain the;
 - i) Problems which have resulted from the forestry activities in the area marked A [4mks]
 - ii) Steps being taken to solve the problems in (c i) above. [4mks]
- d. Outline the contribution of the forestry industry in Gabon. [4mks]

4. Study the map below showing the site of Tema port and answer the questions that follow;



- a. Name the;
 - i) Lagoons marked A and B
 - ii) Harbours marked C and D
 - iii) Industries marked E and F
 - iv) Ocean marked G [7mks]
- b. Explain the factors which have favoured the location of Tema port. [6mks]
- c. Outline the function of Tema port. [4mks]
- d. Describe the;
 - i) Problems affecting the development of Tema port. [4mks]
 - ii) Steps being taken to solve the problems in d (i) above. [4mks]

PART II: STUDIES IN DEVELOPMENT

Answer **two** questions from this part

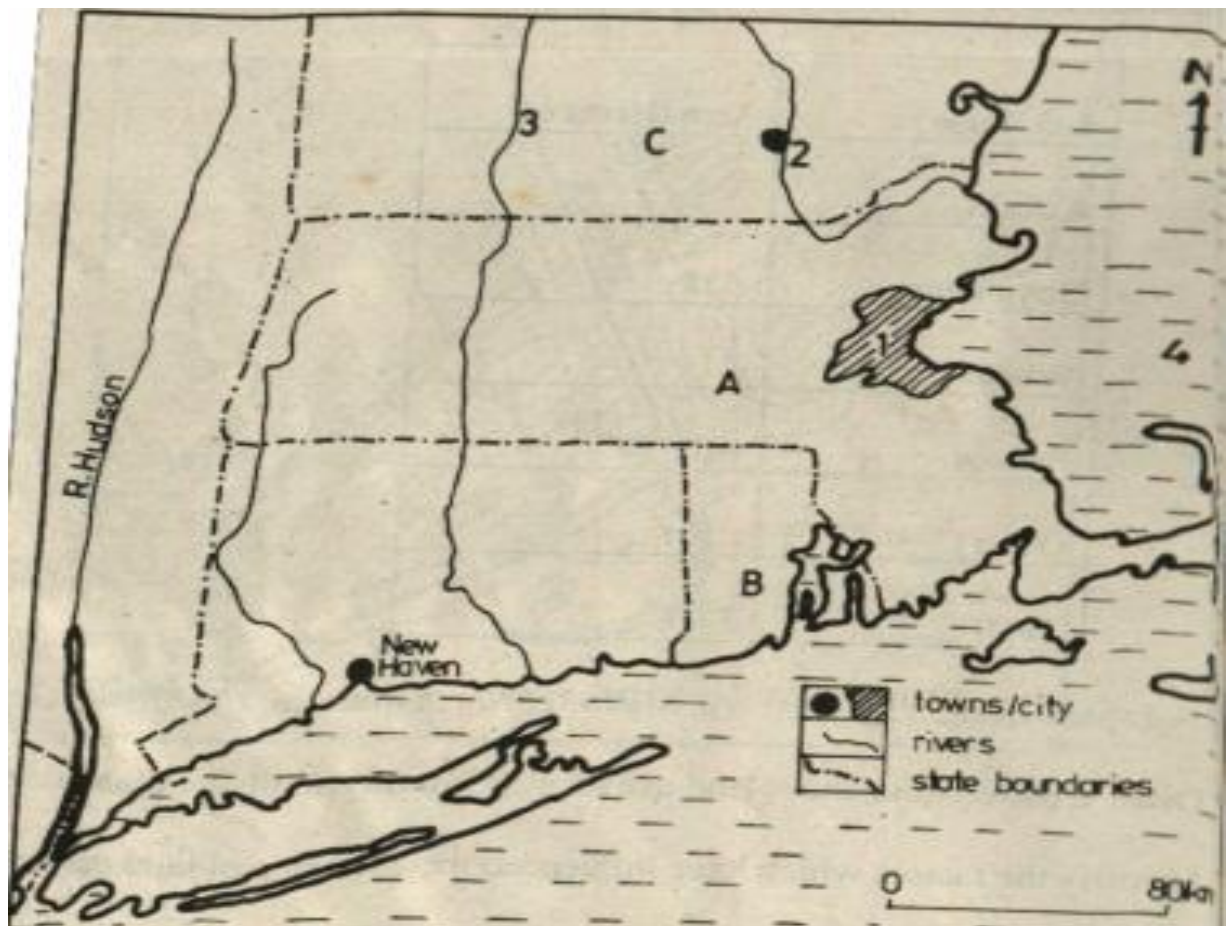
REGION I: NORTH AMERICA

5. Study the table below showing land use on the Howard and Blythe cotton plantation in the South (USA) and answer the questions that follow;

Land use	Area (Hectares)
Cotton	304

Soya beans	638
Wheat	111
Fallow	162
Others	101

- a. Draw a pie –chart to show land use on the Howard and Blythe plantation. [10
 - b. Describe the factors which have influenced the allocation of land on the plantation. [4mks]
 - c. Explain the importance of the agricultural sector to the development of the South. [4mks]
 - d. Outline the;
 - i) Problems facing the agricultural sector in the South [4mks]
 - ii) Steps being taken to solve the problems in d (i) above. [3mks]
6. a) Draw a sketch map of the area covered by the Tennessee Valley Authority and on it, mark and name;
- i) States: Alabama and Tennessee
 - ii) Rivers: Tennessee , Ohio and Mississippi
 - iii) Towns: Nashville and Colbert [8mks]
- b) Explain the reasons for the establishment of the Tennessee Valley Authority. [8mks]
- c) Describe how the Tennessee Valley project has contributed to the modernization of the region. [8mks]
- d) Name any one area in East Africa where a river development project has been established. [1mk]
7. Study the map of Southern New England provided below and answer the questions that follow



- a. Name the;
 - i) States marked A, B and C
 - ii) Towns marked 1 and 2
 - iii) River marked 3
 - iv) Ocean marked 4 [7mks]
- b. i. State three industries found in any of the town named in (a ii) above. [3mks]
- ii. Explain the conditions that have favoured the establishment of industries in New England. [6mks]
- c. Describe the contribution of the industrial sector to New England. [6mks]
- d. Outline the steps being taken by New England to sustain the industrial sector. [3mks]

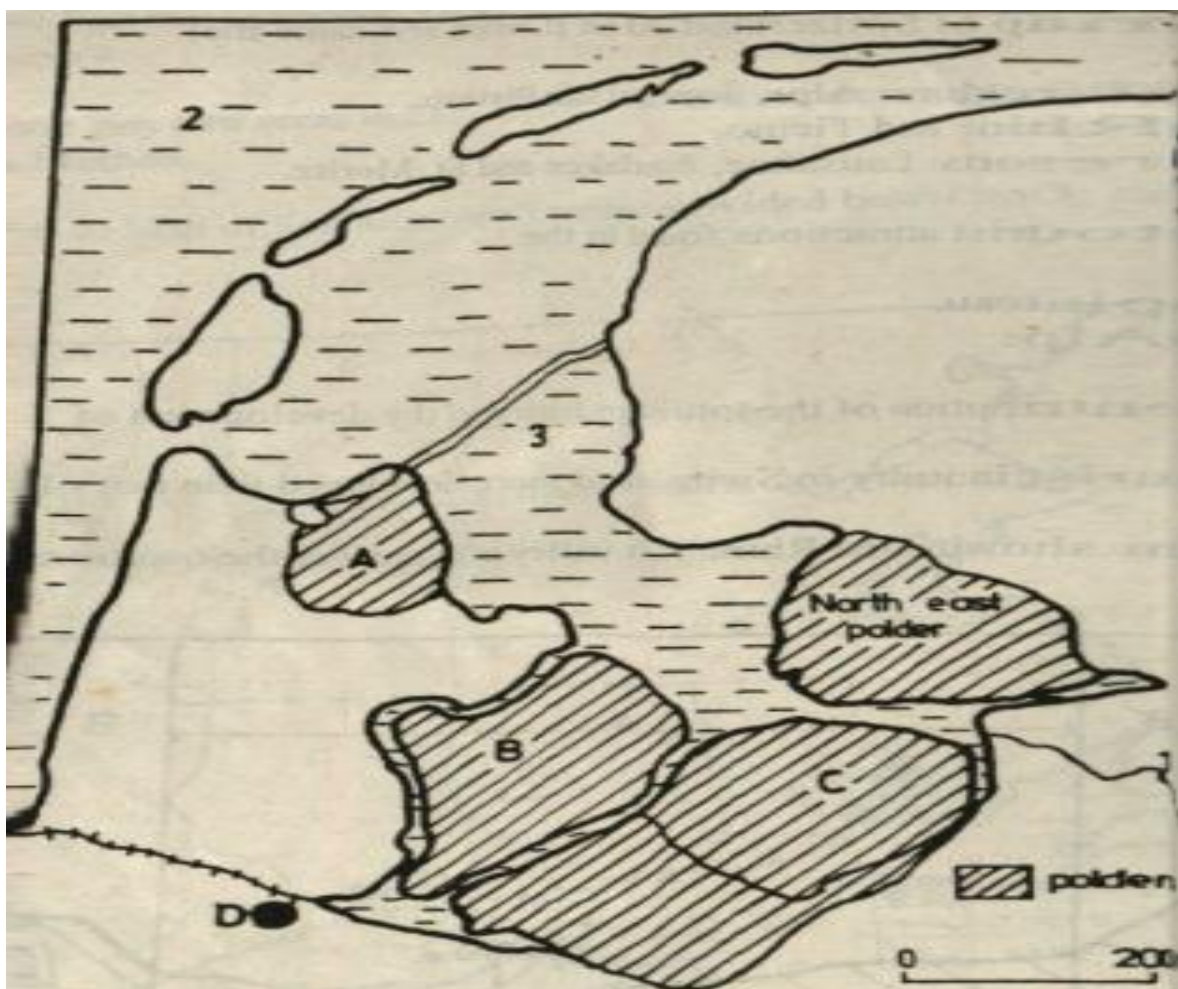
REGION II: RHINELANDS

8. a) Draw a sketch map of Switzerland and on it, mark and name the;
 - i) Physical regions: Alps and the plateau
 - ii) Rivers: Rhine and Ticino
 - iii) Tourist resorts: Lausanne, Interlaken and St. Moritz [8mks]
- b) State any two tourist attractions found in the;
 - i) Swiss plateau [2mks]
 - ii) Swiss Alps [2mks]
- c) Explain the contribution of the tourist industry to the development of Switzerland. [8mks]

d) Why is the tourist industry in Switzerland more developed than that of East Africa? [5mks]

9. a) Describe the processes which led to the formation of Rhine rift valley. [6mks]
b) i. Identify the economic activities taking place in the Rhine Rift valley. [3mks]
ii. Describe the factors which have led to the development of the economic activities in (c i) above. [6mks]
c) Explain the contribution of the Rhine rift valley to the development of Germany. [6mks]
d) Outline the problems faced by people carrying out different economic activities in the Rhine Rift valley. [4mks]

10. Study the map showing the Zuider Zee reclamation scheme in the Netherlands and answer the questions that follow:



- a. Name the;
i) Polders marked A, B and C
ii) River marked 1
iii) Water bodies marked 2 and 3
iv) Town marked D [7mks]
b. Describe how the polders were created. [4mks]
c. Explain the importance of the polders to the people of the Netherlands. [6mks]

d. Outline the;

i) Problems facing the people living on the polders [4mks]

ii) Steps being taken to solve the problems in (d i) above. [4mks]

END

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S.6 GENERAL PAPER S101/1

TIME: 2 hours 40 minutes

INSTRUCTIONS

- The total time of 2 hours and 40 minutes includes ten minutes for you to study the questions before you begin answering.
- Answer **two** questions which must be chosen as follows: **One** question from section **A** and **one** question from section **B**.
- Answers to each question must begin in a fresh answer booklet which should then be fastened together.
- You are advised to divide your time equally between the two questions.
- All questions carry equal marks.
- Any additional question(s) attempted will not be marked.

SECTION A

Answer one question from this section

Answers should be between 500 and 800 words in lengths.

1. "Power belongs to the people." To what extent is this constitutional provision applicable to the Ugandan situation? [50mks]
2. Should prostitution be legalized in your community? [50mks]
3. "The promotion of children's rights is primarily responsible for the increased indiscipline in Uganda schools.' Discuss. [50mks]
4. a) Explain the importance of wetlands in Uganda.
b) What measures should be taken to protect wetlands? [50mks]

SECTION B

Answer **one** question from this section.

5. Study the information provided below and answer the questions that follow.
Sixteen counties are participating in a Nations Cup Final Tournament. They have been grouped as follows;

Group A	Group B
Nitus	Burkia
Darongo	Nenkou
Nigua	Limongi
Wandao	Sengope
Group C	Group D
Angeria	Geriny
Mbazania	Nibento
Merquois	Croama
Delinia	Ricaragua

The following rules have been laid for the tournament:

- The opening matches will be played on Saturday 24th January, 2009 in each group.
- All teams in each group play against each other, and these matches before quarter finals should have ended by the 2nd February.
- No team plays on consecutive days.
- Two matches are played concurrently on the 25th January in groups A and B and 26th January in groups C and D. with effect from 27th January, one match is played every day in each group. All groups rest on 26th January.
- The semi –finals are played concurrently on the same day.
- Three days rest is granted before the commencement of each of the following matches: quarter finals, semi –finals and the match to determine the third place.
- The winners and runners –up in each group go on to the quarter finals.
- Winners in group A play against winners of group B and those from group C play against winners of group D.
- Losers at quarter finals are knocked out..
- Finals are played on 14th February.

Questions

- i) Draw up a timetable for the matches to be played from the beginning to the end of the tournament.
ii) How many matches will be played altogether?
- State the dates on which the following matches will be played:
 - The last matches before quarter finals,
 - Quarter finals,
 - Semi –finals,
 - Third place match.
- What, in your opinion, is the importance of such a tournament to the participating countries?
- Suggest measures that should be taken to improve the sports in Uganda.

- Read the passage below and answer the questions that follow:

As is usual in any romantic theory, we find the name of Byron conspicuous. The Byronic hero in his successive metamorphoses has filled and also written – more books than the tongue can tell. He is volcanic, extreme in all things, magnificent in sin. He is adored of woman (or, conversely he is misunderstood and betrayed by women and retires into lofty isolation and the pageant of his bleeding heart). With the help of modern psychology he has developed complexes and neuroses. At times, to be sure, he evinces a spasmodic and spectacular goodness, but this is a manifestation of his superb energy and must never, according to the theory, be confused with the goodness of good people.

Early in the nineteenth Century, this theory got tangled up with Napoleon and also with far –reaching consequences, with German philosophy. Students of the

history of philosophy point to the doctrines of Fichte. From this source come the Superman, the Master Race, Prussianism, and Hitler. Until there was an actual outbreak in war, we did not resent this kind of thing because the ideas were not very different from ones that we had been brought up on. Not many of us were fooled by Hitler as a person. A bad egg if ever there was one. Yet there was something comic about him, we are such a good-natured people that we find it hard to realize that funny things can be dangerous.

Furthermore, we saw that Hitler and his friend had energy, and we rather admired them for it. We didn't blame them for not wanting to be bullied. We were inclined to discount the stories of domestic terrorism. Even after the war began in Europe, we felt a certain respect for Prussian competence and efficiency. We were genuinely confused by the romantic theory of evil. The thing that awoke up was not the badness of the egg but the terrific consequences of the things that particular egg did. When the war is over, unless I miss my guess, we are likely to be again misled into the same confusion of values.

There is still a third modern theory of evil, and this I shall call the scientific theory. According to this, there is no such thing as sin. Human beings are merely very complicated mechanisms, and they are what they are because of the regular operation of heredity and environment, economic law, vitamin deficiency, hypertrophy of the glands, or whatever else you happen to believe in. Hitler is a paranoiac, and the whole German nation is suffering from a secondary, or induced, paranoia. Exponents of this theory remind us that science doesn't judge; it only explains. You can't blame Hitler for being a paranoiac any more than you blame poison ivy for being poisonous. Some day science will tell us what to do about it, but what if that day doesn't come soon enough?

Here are ways of looking at the evil in human nature –the sentimental, the romantic, and the scientific. Each one of them has qualities that commend it to be the American temperament. Our good heartedness makes us like the first; our energy and independence incline us to the second; everything that is scientific in our education and training prepares us for the third. The fact that they are often contradictory doesn't worry us. Whatever our characteristic American virtues are, logic isn't one of them. We share with the other English-speaking peoples a genius for living happily with contradictions, anomalies, and compromises. And where does it all get us?

Let me return momentarily to Milton. Far be it from me to say that he knew all the answers, but he knew some of them. He knew that ambition leads to cruelty and terror; he knew some of them. He knew that the human race can be saved only by goodness, the goodness of God in man. He knew that the forces of Hell are real and everywhere and always. He saw them in his imaginations, surging and seething and boiling up onto this earth. Theologies, to be sure, are transitory, far more transitory than poetry. So far as Paradise lost is purely

theological, it may be obsolete, but as an analysis of good and evil, it teaches a lesson that we still need to learn. Over the theology of the poem towers Satan, incarnate evil, the arch fiend, the destroyer, and on his head sits horror plumed.

I should like to finish this with a noble peroration on the splendours of American goodness, secure in its native right and triumphant over evil in all its forms; but I shall be on much safer ground if I merely sum up what I have said already. Taking us by and large, we have considerable faith in good people. That faith is probably greater than we realize, and in this respect we are lucky, because a faith in the goodness of men is the one thing that democracy cannot do without. Beyond that we are entangled in a lot of familiar notions about good and evil, accepting now one and now another, never following any of them to their logical conclusions. We can get through this war, I am sure, on our faith in ourselves and our native goodness. It is after the war that we are going to run into trouble. Shall we look at Germany as a nation of beautiful souls, temporarily misled in their emotions but presently to return to an idyllic existence of Beethoven, beer, and Grimm's fairy tales? Or as a Byronic hero -nation, magnificent in sin, romantic in its defiant energy, and then tragic in its defeat? Or as the victim of an unfortunate environment, needing merely a treatment in international economic therapy?

Or shall we really get down to the roots of good and evil and wrestle with our theories until we bring them into some kind of working conformity, not only with one another but with fact?

Questions:

- a. Suggest a suitable title for this passage. [2mks]
- b. What does the author mean by:
 - i) "funny things can be dangerous"? [3mks]
 - ii) "living happily with contradictions"? [3mks]
- c. In not more than 100 words, summarise the theories of the evil in human nature. [12mks]
- d. Explain the meaning of the following words and phrases as used in the passage, using your own words wherever possible:
 - i) Conspicuous
 - ii) Lofty isolation
 - iii) Domestic terrorism
 - iv) Complicated mechanisms
 - v) Temperament
 - vi) Obsolete
 - vii) Familiar notions
 - viii) Defiant energy
 - ix) Economic therapy
 - x) Working conformity [2mks]

END

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S.4 ENGLISH 112/2

TIME: 2 HOURS

Answer *all* questions

Write all answers on this question paper

1. Read the following passage carefully and answer the questions that follow.

You can get an electric shock if electric current flows through you. This usually happens if you touch something, which is connected to a live supply of electricity. The severity of the shock will depend on the size of the current resistance that passes through your body. The current will take the path of least resistance through your body from your hand, to whatever part of you that is in contact with the ground (earth or any objective making contact with the ground.)

The size of the current is directly proportional to the voltage and to the resistance of the path taken by the current. The voltage will probably be a fixed main voltage of 200 to 250 volts. The resistance can vary considerably. Good conductors of electricity have a low resistance; bad conductors have a high resistance are called insulators. For example, rubber is a good insulator, so is dry skin. But water and most metal are good conductors; the body, a fairly good one. This means that if you touch a live part and are well insulated from the ground (for example you are wearing shoes with rubber soles) and have a dry skin, you should not get a severe shock. But if your skin is moist or wet and you are not well insulated from the ground (standing on a wet stone floor with leather shoes) the shock will be severe, possibly fatal. In an iron, the live parts (for example, the heating elements, thermostat and wires connecting them) are insulated from the rest of the iron. Rubber is used to insulate some parts, mainly the connecting wires while mica is used is frequency used to insulate the parts of the iron which get hottest; such as the element. If this insulation deteriorates the user may touch the live wire.

To prevent an electric shock if this happens; path of much less resistance than that through the user can be provided for parts which might become live, so that current will flow along it instead of through the user's body. This is called earthing and is done by means of a third earth wire (in addition to the two conducting wires in the flex), one end of which makes good electrical contact with the ground, through the main socket while the other end is connected to the parts of the iron which might become live.

It is of course, up to the user to make certain that the 3 – wire flex is correctly fitted to a 3 pin plug which in turn is used in a properly earthed socket. Otherwise the iron is not earthed. Fewer accidents would occur if plugs and sockets were correctly wired, so that equipment was properly earthed. If you have any doubts, the first essential is, therefore, to have your wiring and your electrical equipment professionally checked. This will cut down to a minimum

(Source: A higher course of English study by Ronalt Mackin and David Came – Sept, 1962)

In about 120 words, explain the cause of an electric shock and how it can be avoided.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

bartered away were among those which his mother gave me. He was quite satisfied. He took my hand again and led me home. I could hardly believe my good fortune. I breathed easily again, and I began to think that I was rather clever.

The next Saturday, I did the same thing. I bartered away all my father's fish. I told him that I had given them to my grandmother to be put with those which she had for us, and I was not found out. I did it again the following Saturday, and again and again. But my luck was too good to last.

Adapted from "The Narrow Path" by Francis Selormey

Answer questions 2.1 to 2.5 on the question paper.

2.1. Why did the writer always keep an eye on the figure of the father? [2mks]

.....

.....

.....

2.2. What discovery did the writer make about the food sellers? [2mks]

.....

.....

.....

2.3. Why did the writer exchange the whole pile of fish for food? [2mks]

i)

.....

.....

ii)

.....

.....

2.4. What do you think happened next?

.....

.....

2.5. Give the meaning of the following words as used in the passage.

i) ".....longingly....." [1mk]

.....

.....

ii) ".....reckless....." [1mk]

.....

.....

iii) ".....content....." [1mk]

.....

.....

iv) ".....fortune....." [1mk]

.....

.....

Marks for Q 2A	
----------------	--

2. B. Read the following passage carefully and answer the questions that follow:

THE BEGINNING OF CHEMISTRY

Chemistry is that art of Science concerned with how things are made and how things sometimes change. Chemistry studies the structure of matter. When we use the word 'matter' in Chemistry, we mean material of which something is made. In the history of man, there have been different ideas about matter.

Ancient civilization had knowledge of Chemistry. They knew there were different metals, especially Lead, Tin and Copper. Also, they knew how to extract these metals from the ore in which they were buried. They also knew how to combine metals in order to make an alloy. These ancient people –chiefly the Egyptians, Phoenicians, Greeks and Romans understood such things as how to make glass, soap and different kinds of wine. So they had chemical knowledge, even if it was only practical.

Until about four hundred years ago, in Europe at least, the Science of Chemistry was closely connected with a false science of alchemy. The two chief aims of the alchemists were to change base metals such as lead into gold and to try, to find a way to make human beings live longer. Although alchemy was connected with such things as witchcraft, it led in time to the Science of Chemistry as we know it today.

Ancient peoples believed that alchemy was a special kind of knowledge given only to priests and medicine men. It was a god –like knowledge. But while such people studied alchemy, they often discovered medicines and other substances which were useful in many ways. For example, round about 1500AD Paracelsus taught his followers that medical knowledge should be allied to chemical knowledge, and Paracelsus was an alchemist. Later, many of his students turned away from the false search for the secrets of alchemy. In this way, knowledge of Chemistry increased.

Source: Byram R.S: Guided Summary and Note making.

Answer questions 2.6 to 2.10 by selecting the best alternative. Show the latter of your answer by putting a ring ○ around your best choice. [2mks each]

- 2.6. Matter could best be defined as
- A. Metals
 - B. The ore which is buried underground
 - C. Combining metals together
 - D. What something is composed of
- 2.7. What shows that the ancient people had chemical knowledge?
- A. They knew about alchemy
 - B. They knew different metals, how to extract them and making things like glass, soap and wine.
 - C. They used base metals to make human beings live longer
 - D. They knew witchcraft
- 2.8. How did the knowledge of Chemistry increase?

- A. By students turning away from false search for the secrets of alchemy
 - B. Paracelsus taught his followers that medical knowledge was to be allied with chemical knowledge.
 - C. Medicines and other substances were useful in many ways.
 - D. People never lived longer as the alchemists wanted
- 2.9. A possible meaning of an alloy is
- A. The structure of matter
 - B. A combination of metals
 - C. The manufacture of things like soap and wine.
 - D. The use of chemical knowledge
- 2.10. In what way are Priests connected with alchemy
- A. Alchemy was believed to be a special kind of knowledge given to them
 - B. It healed people
 - C. It helped in wine production
 - D. It help in elimination of witchcraft

Marks for Q 2B	
Total marks for Q 2	

3. A. Re-write the following sentences 1 – 10 as instructed in brackets without changing the meaning.

1. I asked him the price of the car. (Use 'enquired' in place of 'asked')

.....

2. He was lucky that the teacher wasn't there. [Begin: Luckily.....]

.....

3. It was an unbelievable story. However, we enjoyed it all the same. [Join into one sentence beginning: Un believable.....]

.....

4. Go now or you will miss the train. [Begin: You will not.....]

.....

5. That explains why she was so secretive. [Begin with That accounts.....]

.....

6. It was a mystery to us why he decided to leave. [Begin: Why.....]

.....

7. No matter who or where you are, there are certain laws to be obeyed. [Begin: Whoever.....]

.....

.....
8. It is better to spend a holiday at the coast than to go overseas. (Begin:
Spending..... Use "preferable" instead of "better")
.....

.....
9. The president's whole life has been devoted to the service of the community.
[Begin: The Present has spent.....]
.....

.....
10. Come back as soon as you possibly can. [Finish.....possible.]
.....
.....

Marks for Q 3 A	
-----------------	--

3. B. Complete the sentences 3.11 to 3.10 with the most suitable answer among the
given alternatives. Put a ring  around your answer.

3.11. Kato.....on weekends. He does it because he enjoys it.

- a. Needn't work c. needn't to work
- b. Mustn't work d. mustn't have worked

3.12. It's high time you.....your childish ways.

- a. Change b. must change c. have changed d. changed

3.13. Peter said that the meeting for today has been.....

- a. Given off b. made off c. turned off d. called off

3.14. He was staring.....at his enemy.

- a. Hardy b. hardly c. hard d. in a hard manner

3.15. The grass will grow again.....

- a. In the course of time c. through the course of time
- b. In time's course d. through a course of time

3.16. Time is short and the secretaries are typing.....

- a. With a pressure c. under the pressure
- b. Under pressure d. to pressure

3.17. Big shops display their goods in windows with.....

- a. A thick glass b. thick glass c. the thick glass d. thick glasses

3.18. In the days, fishermen liked to make.....for themselves.

- a. Equipments c. equipment
- b. Some equipments d. an equipment

3.19. He ate hardly.....because he said the oil made him sick.

- a. Some sardine b. sardine c. much sardines d. any sardines

3.20. It's no use.....it all in five minutes.

- a. You try to do c. that you shall try to do
- b. That you should try to do d. your trying to do

END

“Survival for the fittest”

Marks for Q 3B	
Total marks for No. 3	

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RESOUREFUL MOCK 2018

SUBSIDIARY MATHEMATICS

S.6 S475/1

TIME: 2hours 40 minutes

INSTRUCTIONS TO CANDIDATES

Answer **all** the **eight** questions in section **A** and only **four** questions in section **B**.

Any additional question(s) will not be marked.

Each question in section **A** carries **5** marks while each question in section **B** carries **15** marks.

All working **must** be shown clearly.

Begin each answer on a fresh sheet of paper.

Graph paper is provided.

Where necessary, take acceleration due to gravity $g = 9.8\text{ms}^{-2}$

Silent non-programmable scientific calculators and mathematical tables with a list of formulae may be used.

SECTION A [40 marks]

Answer **all** the questions in this section

1. Evaluate $\frac{\log_6 216 + \log_2 64}{\log_3 243 - \log_{10} 0.1}$ [5mks]
2. The table below shows the ranks of marks awarded by Judge 1 (R_x) and Judge 2 (R_y) to 7 choir groups A to G.

Choir	A	B	C	D	E	F	G
Rank Judge 1 (R_x)	2	4	6	1	5	3	7
Rank Junk 2 (R_y)	2	3	5	1	6	4	7

Calculate Spearman's rank correlation coefficient between the marks awarded by the two judges.

Comment on your results. [5mks]

3. Solve the equation $3 \sin^2 \theta + \cos \theta + 1 = 0$ for values of θ from 0° to 180° inclusive. [5mks]
4. A committee of 5 people is to be formed from a group of 6 men and 7 women.
 - a. Find the number of possible committees. [2mks]
 - b. What is the probability that there are only 2 women on the committee? [3mks]
5. Find the gradient of the curve $y = 4x^2(3x + 2)$ at the point (1, 20) [5mks]
6. Three events A, B and C are such that $P(A) = 0.6$, $P(B) = 0.8$, $P(B/A) = 0.45$ and $P(B \cap C) = 0.28$. Find;
 - a. $P(A \cap B)$ [3mks]
 - b. $P(C/B)$ [2mks]
7. The matrix $A = \begin{pmatrix} 2 & 1 \\ -3 & 0 \end{pmatrix}$ and I is a 2×2 identity matrix. Determine the matrix B such that $A^2 + \frac{1}{2}B = I$ [5mks]

8. A bullet of mass 50g is fired towards a stationary wooden block and enters the block when travelling horizontally with a speed of 500ms^{-1} . The wooden block provides a constant resistance of 36,000N. Find how far into the block the bullet will penetrate. [5mks]

SECTION B [60 marks]

Answer only **four** questions from this section

9. The table below shows the number of students and the marks scored in a test.

Marks	Number of students
0 – 4	10
5 – 9	7
10 – 14	5
15 – 19	3
20 – 24	7
25 – 29	11
30 – 34	37
35 – 39	20

- a. i) Draw a cumulative frequency curve (Ogive) for the data.
 ii) Use the Ogive to estimate the median mark. [6mks]
- b. Calculate the:
 i) Mean mark
 ii) Standard deviation [9mks]

10. A student attempts 20 objective questions by mere guess work. Each question has got four possible alternatives out of which only one is correct. Find the probability the he gets;
- Exactly 9 correct answers
 - At least 12 correct answers
 - At most 6 correct answers
 - Between 6 and 14 correct answers inclusive
 - At least 8 incorrect answers

11. The table below shows the prices (in Ug shs) of some food items in January, June and December together with the corresponding weights.

Item	Price (in Ug shs)			Weight
	January	June	December	
Matooke (1 bunch)	15,000	13,000	18,000	4
Meat (1 kg)	6,500	6,000	7,150	1
Posho (1kg)	2,000	1,800	1,600	3
Beans (1kg)	2,200	2,000	2,860	2

Taking January as the base month, calculate the:

a. Simple aggregate price index for June. [5mks]

Comment on your result.

b. Weighted aggregate price index for December
Comment on your result. [10mks]

12. The roots of the equation $2x^2 - 6x + 7 = 0$ are α and β . Determine the:

a. Values of $(\alpha - \beta)^2$ and $\frac{1}{\alpha^2\beta} + \frac{1}{\alpha\beta^2}$ [12mks]

b. Quadratic equation with integral coefficient whose roots are $(\alpha - \beta)^2$ and $\frac{1}{\alpha^2\beta} + \frac{1}{\alpha\beta^2}$ [3mks]

13. A continuous random variable X has a probability density function given by;

$$f(x) = \begin{cases} \frac{kx}{6}, & 1 \leq x \leq 2 \\ 0, & \text{otherwise,} \end{cases}$$

Where k is a constant

a. Find

i) The value of k [4mks]

ii) $P(X \geq 1.5)$ [4mks]

iii) The mean of X, $E(X)$ [3mks]

b. Sketch the graph of $f(x)$ [4mks]

14. A motorist moving at 90kmh^{-1} decelerates uniformly to a velocity $V \text{ ms}^{-1}$ in 10 seconds. He maintains this speed for 30 seconds and then decelerated uniformly to rest in 20 seconds.

a. Sketch a velocity -time graph for the motion of the motorist. [6mks]

b. Given the total distance travelled is 800m, use your graph to calculate the value of V . [5mks]

c. Determine the two decelerations. [4mks]

END

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RESOUREFUL MOCK 2018

S.4 MATHEMATICS 456/2

TIME: 2½ HOURS

INSTRUCTIONS

Answer **all** questions in section **A** and any **five** in section **B**

Any addition question(s) answered will not be marked.

SECTION A

- Express 1.6363..... as a fraction in it's simplest form.
- The function $g(X) = aX^2 + 3$. If $g(2) = 11$. Find the value of a .
- Two sets A and B are such that $n(A) = 8$, $n(B) = 11$, $n(A \cap B) = 5$ and $n(A \cup B)' = 3$
Find $n(\epsilon)$ where ϵ is the universal set.
- Find the equation of the line through the point R (5, 9) and parallel to the line $2y + 3X - 4 = 0$.
- The position vectors A and B are $\underline{a}$ and $\underline{b}$. A point X is on AB such that $4 \overline{AX} = 3 \overline{AB}$. Find the position vector of X interms of $\underline{a}$ and $\underline{b}$.
- A salesman earns a basic salary of shs 180,000 and a commission of 10% of the month's total sales. If the month's total sales were shs 1,350,000. Find his income for that month.
- Simplify: $\frac{\sqrt{35}}{\sqrt{7}} + \frac{\sqrt{30}}{\sqrt{6}}$
- A cylinder has a radius of 12cm and the height of 5cm. Find the area of the curved surface.
- Express 18 and 42 each as a product of its prime factors and hence find their highest common factor (HCF).
- The capacity of a cylindrical tin is 2 litres, it's radius is 8cm. Find its height.

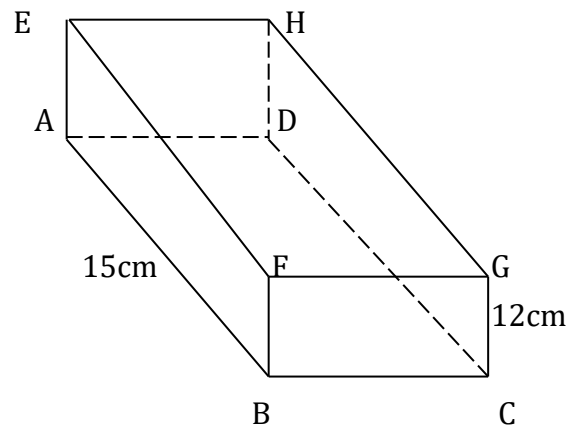
SECTION B

- The functions F and g are defined by $F(X) = \frac{X}{X-5}$ and $g(X) = X + 4$
Find;
 - $g(-10)$
 - $F^{-1}(X)$ and hence $F^{-1}(6)$
 - The value of X for which $g(F(X)) + F(g(X)) = 0$
- A cyclist sets off from town A at 4: 00am at a speed of 20 Kmh^{-1} to go to town B 100Km away. A motorist also sets off from town A at 7: 30am at a speed of 100 Kmh^{-1} to go to town B. Find
 - Distance from town A when the motorist overtakes the cyclist. [6mks]
 - Time when the motorist overtakes the cyclist. [3mks]
 - Time the cyclist reached town B. [3mks]
- A school has a teaching staff of 22 teachers, 8 of them teach Mathematics, 7 teach Physics and 4 teach Chemistry. Three teach both Mathematics and Physics and

one teaches Mathematics and Chemistry. No teacher teaches all the 3 subjects. The number of teachers who teach Physics and Chemistry is equal to that of those who teach Chemistry but not Physics.

- Represent the above information on a Venn diagram.
- Find the number of teachers who teach
 - Mathematics only
 - Physics only
 - None of the three subjects
- Find the probability that a teacher picked at random teaches only one or none of these subjects.

14.



The figure ABCDEFGH is a rectangular box with square ends BCGF and ADHE of side 12cm. AB = 15cm, calculate the;

- Length BD and BH
 - Angle between BH and plane ABCD
 - Angle between planes CFH and BCGF
15. a) Calculate the simplest interest on shs 990,000 for 8 months at a rate of $5\frac{1}{2}\%$ per annum.
- b) The income tax rates of a certain country are shown in the table below.

Taxable income (shs)	Rate (%)
01 – 200,000	6
200,001 – 500,000	13
500,001 – 900,000	20
900,000 and above	30

- Calculate the income tax an employee pays if the employee's taxable income is Ug shs 1,170,000.
 - Given that the employee's untaxed allowances is shs 140,750, find the employee's net income.
16. a) Given that vectors $\underline{a} = \begin{pmatrix} -2 \\ 7 \end{pmatrix}$, $\underline{b} = \begin{pmatrix} 8 \\ 11 \end{pmatrix}$ and $\underline{c} = \begin{pmatrix} 4 \\ -5 \end{pmatrix}$. Find
- $\underline{a} + 2\underline{b} + \underline{c}$

ii) the length of $\underline{a} + 2\underline{b} + \underline{c}$

b) The position vectors of D and E are $\begin{pmatrix} 6 \\ 4 \end{pmatrix}$ and $\begin{pmatrix} 12 \\ -11 \end{pmatrix}$ respectively. M is on DE such that $\overline{DM} : \overline{DE} = 2 : 3$. Find

i) DE

ii) DM

iii) The position vector of M

17. a) Work out $\frac{2\frac{1}{2} + \left(\frac{3}{5} \times 1\frac{1}{4}\right)}{1\frac{1}{8} - \frac{3}{4}}$

b) The scale on a map is 1: 2000. A building is represented on the map by an area of 6cm^2 . Find the actual area in m^2 occupied by the building.

c) If $\log_{10} X = 0.3979$ and $\log_{10} y = 0.4771$. Find the value of $\log_{10} X^3/y$

END

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INSTRUCTIONS TO CANDIDATES

Attempt **all** questions in section **A**, section **B** and **C** only **two** questions.

For section **A** write or circle the correct alternative either **A**, **B**, **C** or **D**

Section **B**, fill the spaces provided.

Section **C**, answer only two questions in the spaces provided (Fulscaps provided)

SECTION A

1. What happens during pupal stage of insect?
A. They do not eat food and move a lot
B. They develop organs and do not move
C. Parents care for them
D. They destroy pupal case and their temperature falls

☐
2. Which one of the following is not a mammal?
A. Cow B. Whale C. Bat D. Chicken

☐
3. Under which phylum does the grasshopper fall?
A. Arthropoda B. Orthoptera C. Mollusca D. Insecta

☐
4. The central nervous system includes _____
The peripheral nervous system includes _____
A. Nerves and ganglia; brain and spinal cord
B. Brain and spinal cord; nerves and ganglia
C. Spinal cord, brain
D. Nerves and inter neurons; brain and spinal cord

☐
5. Which one of the following pairs of activities consists of correct responses to cold in a mammal?
A. Vasoconstriction, hairs standing
B. Increased metabolic rate, hairs lying flat
C. Increased blood flow to the skin surface, hairs lying flat.

☐
6. The term oxygen debt means.....
A. The amount of oxygen originally present in the muscles of an athlete before a race.
B. The amount of oxygen taken in after a race and used to complete oxidation of some lactic acid formed.
C. The total amount of oxygen taken in during heavy breathing after a race.
D. The amount of oxygen needed by the lungs after a race for oxidation of glucose.

☐
7. Which of the following traits is likely to be inherited in man?
A. Well developed muscles in a sports man
B. A scar acquired by a parent in an accident
C. Diabetes

☐

- D. Abnormal hemoglobin in red blood cells.
8. Which of the following is true about a person of blood group O?
- A. Receive blood from people of all other blood groups ☐
- B. Donates blood to people of all other blood groups.
- C. Reserves blood from only people of blood group AB
- D. Donates blood to only people of blood group AB
9. Albinism in man is due to a double recessive gene, aa. To produce albino children, both parents must be heterozygous. What proportions of the children born to such parents are expected to be albino?
- A. 1 albino: 3 normal C. 1 albino: 1 normal ☐
- B. 3 albino: 1 normal D. 4 albino: 0 normal
10. One of the following insects undergoes incomplete metamorphosis in its life cycle
- A. Butterfly B. Termite C. Bee D. Cockroach ☐
11. The respiratory surface of a fish is.....
- A. Gill bar C. Gill arch ☐
- B. Gill filament D. Gill raker
12. Which of the following is an example of a reflex action?
- A. Eating C. Screaming after kicking a stone ☐
- B. Riding D. Salivating on smelling food
13. Which one of the following statements best explain the term evolution?
- A. Increase in size of an organism
- B. The fusion of male and female gametes ☐
- C. The way in which characteristics are inherited
- D. Process of gradual change in a living organism and their offspring.
14. In a cattle, when a white bull is mated with a red cow, the offspring is roan. This indicates that the gene for white is:
- A. Dominant to that for red C. recessive to that for red ☐
- B. Codominant with that for red D. Mutated to show roan
15. At which stage in life history of a mosquito will it be easiest to kill the greatest number?
- A. Egg B. larva C. Pupa D. Adult ☐
16. Which of the following is affected when the cerebrum is damaged?
- A. Breathing and heartbeat
- B. Memory and voluntary regulation ☐
- C. Body balance and osmo regulation
- D. Osmo regulation and temperature control.
17. An insects respiratory system consists of
- A. Trachea, tracheoles, bronchioles C. spiracles, trachea, bronchioles ☐
- B. Spiracles, trachea, tracheoles D. trachea, bronchioles, tracheoles
18. Which of the following organs contains glands which are part of the endocrine system?
- A. Liver, Pancreas, Heart C. Brain, Testis, Heart ☐

- B. Brain, Pancreas, Ovary D. Kidney, Heart, Liver
19. Which of the following is a directional growth movement? ☐
- A. Taxis B. Reflex C. Tropic D. Nastic
20. Older stems use.....for gaseous. ☐
- A. Stomata B. Lenticels C. Cambium D. Epidermis
21. Which of the following cells lacks a nucleus? ☐
- A. Sieve tubes C. Companion ☐
- B. Collenchyma D. White blood cells
22. Another name given to flowering plants is: ☐
- A. Pteridophytes C. Ferns
- B. Bryophytes D. Angiosperms
23. Which one of the following has no transport system? ☐
- A. Squid B. Hydra C. Octopus D. Snail
24. Which of the following parts of the mammalian ear is concerned with balance? ☐
- A. Cochlea C. Semi circular canal
- B. Eustachian tube D. Oral window
25. Which of the following is true about nastic response? ☐
- A. Depends of the direction of the stimulus
- B. Does not involve hormones
- C. Is relatively low
- D. Does not involve only growth
26. Secondary sexual characteristics such as breasts in female are examples of characters that are: ☐
- A. Sex influenced C. sex linked
- B. Autosomal D. Sex limited
27. Which of the following characteristics show continuous variation? ☐
- A. A, B, O blood group C. Sickle cells
- B. Hemophilia D. height
28. Which trophol level has the highest energy? ☐
- A. Producer C. Secondary consumer
- B. Primary consumer D. Tertiary consumer
29. Which one of the following enzymes converts starch to maltose and maltose to glucose? ☐
- A. Amylase, lactase C. Amylase, catalase
- B. Amylase, sucrose D. Amylase, maltose
30. Which one of the following groups of organisms usually colonise bare rock first? ☐
- A. Mosses B. Lichens C. Grasses D. Herbs

SECTION B

31. Spring tails are small animals that live in the soil and eat dead plants. Spring tails are eaten by other small animals called mites.

a. i) Use this information to draw the food chain [1½mks]

.....

.....

.....

ii. Which organism in the food chain is the primary consumer? [1mk]

.....

.....

.....

b. A field was sprayed with pesticide. Students used quadrants to estimate the population size. The population size of spring tails and mites living in the soil of the field. They did this every two months for a year. The results are shown in the table below:

Time in months (from spraying)	Estimated number of soil animals in the field	
	Spring tails	Mites
0	5200	5000
2	4800	3800
4	4700	2500
6	5200	2600
8	6500	5000
10	10,000	5100
12	6500	5000

i) Use the information in the table to plot a line graph. [5½mks]

ii) Describe the changes in the number of spring tails during the year and suggest reasons for each of the changes.

This image shows a full page of white paper with horizontal dashed lines, typical of primary school writing paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

iii) What can students do to get accurate results? [3mks]

.....

.....

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c. Draw a pyramid of energy for the food chain in a (i) above. [1½mks]

d. Explain the shape of the pyramid. [2½mks]

.....

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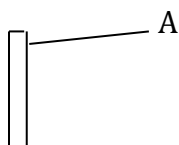
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32. The apparatus below can be used as a model to demonstrate the function of the diaphragm.



- d. Explain how a short period of exercise can affect breathing rate. [1½mks]

.....

.....

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.....

.....

.....

.....

33. The table below shows the diploid number of chromosomes found in the nuclei of some animal cells.

Animal	Diploid number
Human	46
Donkey	62
Horse	64

- a. Explain what is meant by diploid number. [2mks]

.....

.....

.....

.....

.....

- b. Where in the human body would you find cells that do not contain the diploid number of chromosomes? [2mks]

.....

.....

.....

.....

.....

- c. A donkey and a horse are similar in structure. If they mate they can produce a hybrid organism called a mule.

- i) What would be the number of chromosomes found in the body cells of a mule? Give a reason for your answer. [2mks]

.....

.....

.....

.....

- ii) When two mules are mated they are unable to produce offsprings and are described as infertile. Suggest an explanation for this infertility. [1mk]

.....

.....

.....

-
- d. An amoeba is a single celled organism and it contains 13 chromosomes. What does its chromosome number suggest about its method of reproduction?

[1mk]

-
-
-
- e. Explain why there is genetic variation in meiosis as opposed to mitosis. [02

.....

SECTION C

34. Describe and explain how substances enter and how substances are transported around a plant. [14mks]

35. a) Describe how sexual reproduction differs from asexual reproduction. [3mks]

- b) Suggest why many gardeners choose, artificial propagation as the method of reproducing their best varieties. [4mks]

- c) Give one difference between potato tuber and bulbs. [1mk]

- d) Suggest why potato tubers that are exposed to the light turn green. [1mk]

- e) Suggest how starch is used to make a tuber grow into a new potato plant. [4mks]

- f) Describe a simple test you would carry out to show that a potato tuber contains starch. [2mks]

36. a) Explain how excretion differs from egestion. [5mks]

- b) Describe how substances move into and out of cells. [8mks]

- c) Why does eating a cactus benefit a desert animal? [2mks]

37. Human activity has caused negative consequences on the environment. Using many examples explain this statement. [15mks]

END

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PHYSICS PAPER 2

2¼ hours

RESOUREFUL MOCK 2018

Uganda Certificate of Education

PHYSICS

Paper 2

2 hours 15 minutes

INSTRUCTIONS TO CANDIDATES

Answer any **five** questions.

Any additional question(s) answered will not be marked.

These values of physical quantities may be useful to you;

Acceleration due to gravity g	$= 10\text{ms}^{-2}$
Specific heat capacity of water	$= 4200 \text{ J Kg}^{-1} \text{ K}^{-1}$
Specific heat capacity of copper	$= 400 \text{ J Kg}^{-1} \text{ K}^{-1}$
Specific latent heat of fusion of ice	$= 3.36 \times 10^5 \text{ J kg}^{-1}$
Density of water	$= 1000 \text{ Kg m}^{-3}$
Density of mercury	$= 13600 \text{ Kg m}^{-3}$
Speed of sound in air	$= 320 \text{ ms}^{-1}$

1. a) Define the following.

i) Uniform acceleration [1mk]

ii) Linear momentum [1mk]

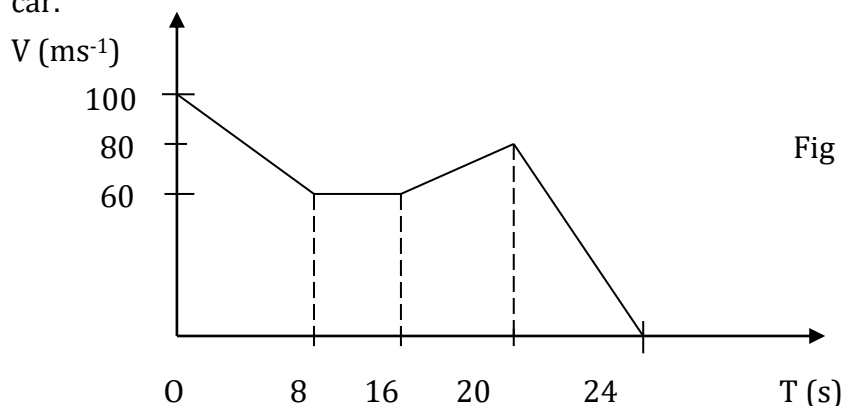
b) A trolley A of mass 150g moving with a velocity of 20ms^{-1} collides with another stationary trolley B of mass 100g. If A and B move together after collision. Calculate;

i) Velocity with which A and B move after collision [3mks]

ii) Loss in kinetic energy of the trolley [3mks]

c) Describe a simple experiment to determine an acceleration due to gravity using a simple pendulum. [5mks]

d) The graph in the figure 1 below, shows the variation of velocity with time of a car.



Describe the motion of the car.

[3mks]

2. a) i. What is saturated vapour?

[1mk]

- ii. State Charles' law. [1mk]
- b) Describe an experiment to show that water is a bad conductor of heat. [5mks]
- c) i. State Kinetic theory. [1mk]
- ii. Using kinetic theory how evaporation causes cooling. [3mks]
- d) Give two differences between boiling and evaporation. [3mks]
- e) A volume of 2500cm^3 of a gas is collected at 67°C at a pressure of 730mm Hg . Calculate the volume of the gas at s.t.p. [3mks]

3. a) Define the following terms;

- i) Refraction [1mk]
- ii) Refractive index [1mk]

b) A monochromatic ray of light is incident on air –glass boundary as shown in the figure below.

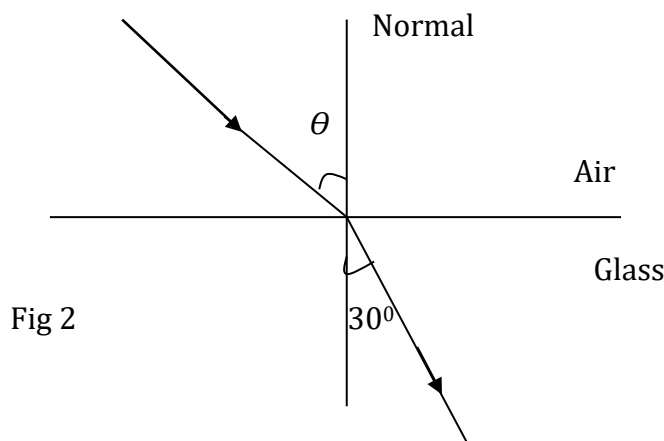


Fig 2

If the refractive index of glass is 1.52, calculate the value of angle θ [2mks]

- c) An object of height 8cm is placed 48cm in front of a concave mirror of focal length 16cm. Using a scale drawing determine the position, magnification and nature of the image formed. [5mks]
- d) i. What is meant by the term long sightedness? [1mk]
- ii. How can it be minimized in practice? [2mks]
- e) Describe how the focal length of a concave mirror can be determined. [4mks]

4. a) What are X –rays? [1mk]

b) i. With the aid of a labeled diagram, describe how X –rays are produced in an X –ray tube. [5mks]

ii. State one medical use and one industrial use of X –rays. [2mks]

c) Define the following:

- i) Nuclear fission [1mk]
- ii) Nuclear fusion [1mk]

d) A radioactive nuclide ${}_{92}^{235}\text{A}$ decays by emission of two alpha particles. The resulting nuclide emits three beta particles resulting into a nuclide which emits gamma rays. Determine the atomic mass and the number of protons of Y and write a balance equation for the decay. [3mks]

e) i. What is meant by half –life of a radioactive substance? [1mk]

- ii. The half-life of Radium is 1620 years. How long will it take 16g of Radium to decay to 2g? [2mks]
5. a) Define the terms;
- i) Amplitude [1mk]
 - ii) Wavelength [1mk]
- b) Draw diagrams to show how circular water ripples are reflected from
- i) Concave reflector [1mk]
 - ii) Convex reflector [1mk]
- c) i. Distinguish between longitudinal waves and transverse waves. [2mks]
- ii. Give one example of each of the waves in (c i) [1mk]
- d) State four properties of electromagnetic waves. [2mks]
- e) Describe an experiment to show reflection of sound waves. [5mks]
6. a) i. State the law of electrostatics. [1mk]
- ii. Draw a well labeled diagram of a Gold leaf electroscope. [3mks]
- b) i. Draw the electric field pattern due to two positively charged particles placed a small distance apart. [2mks]
- c) Describe how can one charge a body by positive induction. [7mks]
- d) State three uses of a Gold leaf electroscope. [3mks]
7. a) Define the following terms;
- i) Strain [1mk]
 - ii) Brittleness [1mk]
- b) With the aid of a diagram, describe an experiment to verify Hooke's law using a spring. [6mks]
- c) i. A material of mass 2kg requires 4.4×10^3 J for its temperature to change from 60°C to 80°C . Calculate its specific heat capacity. [3mks]
- ii. If the material in (c i) is placed in a vacuum, state why it cools. [1mk]
- d) Two forces of 7N and 9N act perpendicular on a body of mass 2kg. Find the acceleration of the body. [4mks]
8. a) State the conditions for a body to be in
- i) Stable equilibrium [1mk]
 - ii) Neutral equilibrium [1mk]
- b) Explain why bus passengers' luggage is loaded in the boots rather than the racks on the top of the bus. [4mks]
- c) A block of wood floats on both liquid X and liquid Y, but with a greater portion, inside liquid Y than in X. Explain this observation [4mks]
- d) If a block of wood of volume 280cm^3 floats on water with $\frac{3}{4}$ of its volume immersed, find the;
- i) Mass of the wooden block
 - ii) Fraction of the block that sinks when it is placed in cooking oil of density 0.84gcm^{-3} [3mks]

RESOUREFUL MOCK 2018

S.4 PHYSICS 535/3

TIME: 2¼ hours

INSTRUCTIONS TO CANDIDATES

Answer question **1** and **one** other question. You will not be allowed to start working with the apparatus for the **first quarter** of an hour.

Marks are given mainly for a clear record of the observation actually made, for their suitability and accuracy, and for the use made of them.

Candidates are reminded to record their observations as soon as they are made. Whenever possible, candidates should put their observations and calculations in a suitable table drawn in advance.

An account of the method of carrying out the experiment is not required.

Squared paper is provided.

Mathematical tables and silent non-programmable calculators may be used.

1. In this experiment, you will determine the property, l , of the mass labeled Y provided. [20mks]

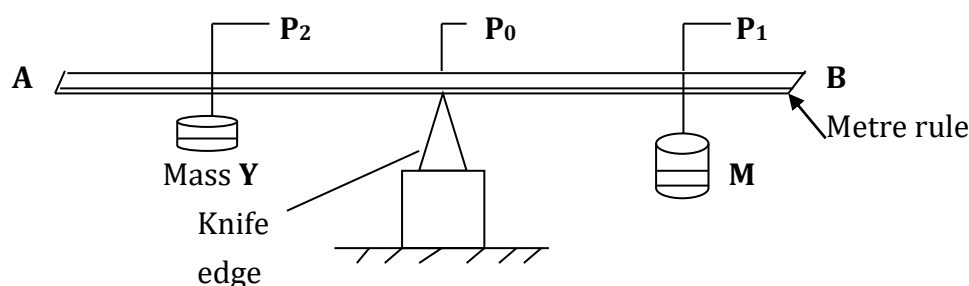


Fig. 1

- a. Tie a mass $M = 0.700$ kg to the metre rule at point, P_1 a distance 70cm from end A.
- b. Suspend the mass Y close to end A of the metre rule.
- c. Place the metre rule with the masses on the knife edge at the point, P_0 , a distance 60cm from end A.
- d. Record, in metres the distance $x_0 = P_1 - P_0$.
- e. Adjust the position of the mass, Y along the metre rule until it balances horizontally as shown in figure 1.
- f. Read and record the scale reading, P_2 , of the position of Y.
- g. Repeat procedures (a) to (f) for values of $M = 0.600, 0.500, 0.400, 0.300$ and 0.200 kg.
- h. Record your results in a suitable table including values of $x = P_0 - P_2$.
- i. Plot a graph of M (**along the vertical axis**) against x (**along the horizontal axis**)
- j. Determine the slope, S , of the graph.
- k. Calculate the constant l of the mass, Y, from $l = Sx_0$

2. In this experiment, you will determine the constant, K of the material of the glass block provided. [20mks]

- Fix the plain sheet of paper onto the soft board using drawing pins.
- Place the glass block with its broad face on the paper.
- Trace the outline ABCD of the glass block as shown in figure 2.

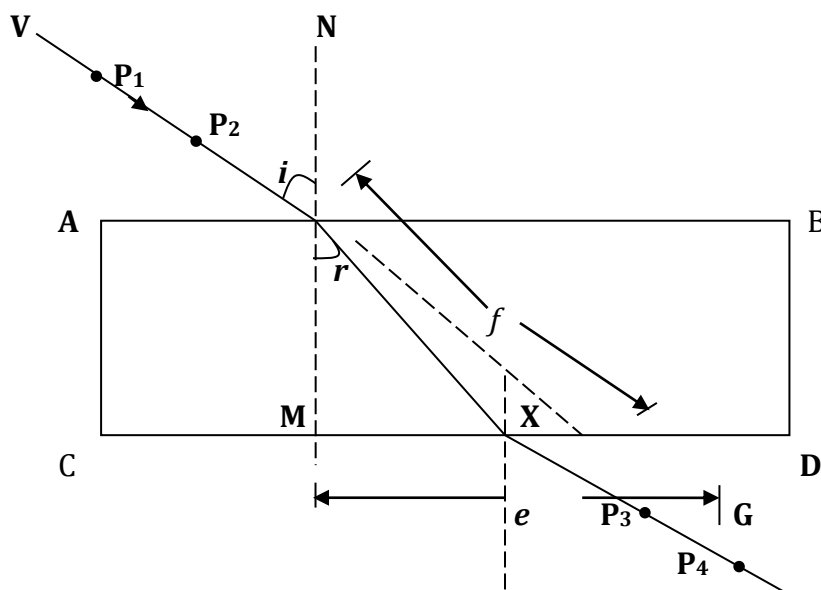


Fig. 2

- Remove the glass block.
- Draw a normal NM at W, 2cm from A
- Draw a line VW at angle $i = 10^\circ$ to NW.
- Fix pins P_1 and P_2 along VW.
- Replace the glass block on its outline.
- While viewing through the block from side CD, fix pins P_3 and P_4 so that they appear to be in line with images P_1 and P_2 .
- Remove the glass block and pins P_3 and P_4 . Draw a straight line through marks P_4 and P_3 to meet CD at X.
- Join X to W.
- Produce VW to meet CD at G.
- Measure and record angle r and distances e , and f .
- Repeat procedures (f) to (m) for values of $i = 20^\circ, 30^\circ, 40^\circ, 50^\circ$ and 60°
- Plot a graph of $\sin i$ (along the vertical axis) against $\frac{e}{f}$ (along the horizontal axis).
- Determine the slope, K , of your graph.

HAND IN YOUR TRACING PAPER TOGETHER WITH THE REST OF YOUR WORK.

3. In this experiment, you will check the uniformity of the resistance wire, W provided. [20mks]

- Connect the circuit shown in figure 3.

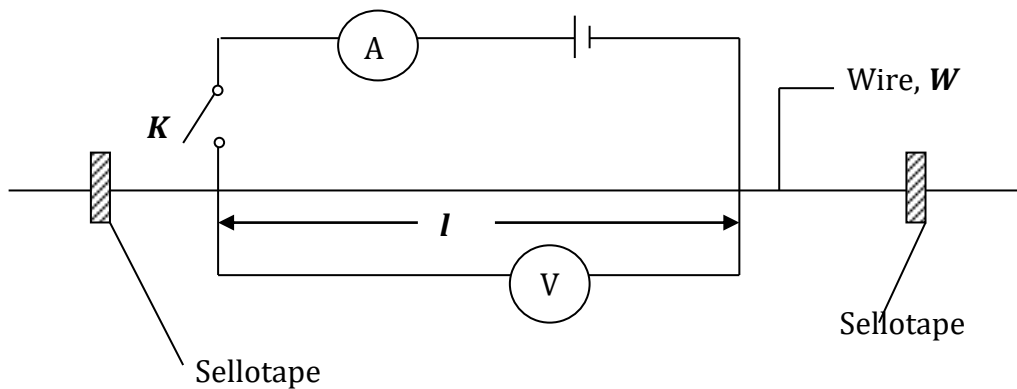


Fig. 3

- b. Adjust the length, l , of the wire, W to 15cm.
- c. Close switch, K
- d. Read and record the ammeter reading I and voltmeter reading, V
- e. Open switch K .
- f. Repeat procedures (b) to (e) for values of $l = 20, 30, 40, 50, 60, 65$ and 70cm .
- g. Enter your results in a suitable table including values of $\frac{V}{I}$
- h. Plot a graph of $\frac{V}{I}$ (along the vertical axis) against l (along the horizontal axis)**
- i. Find the slope, S , of the graph.
- j. Read and record the value, C , of $\frac{V}{I}$ when $l = 45\text{ cm}$.
- k. Calculate the value of, r , from $r = \frac{C}{45 S}$.

END

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RESOUREFUL MOCK 2018

S.6 ECONOMICS P220/1

TIME: 3 hours

INSTRUCTIONS TO CANDIDATES

Answer **five** questions

Section **A** is compulsory. Answers to this section should be concise

Answer **four** questions from section **B**

All questions in section B carry equal marks

Any extra question attempted will not be marked.

SECTION A

1. a) Given that 85 units of commodity X are demanded when the price of commodity y is 200sh. Suppose the quantity demanded of commodity x increases by 20% as a result of a reduction in price of commodity y by 60 shillings.
 - i) Calculate the cross elasticity of demand [3mks]
 - ii) State the relationship between the two goods. [1mk]
- b) Illustrate and account for the kinked demand curve of an oligopoly firm. [4mks]
- c) i. Distinguish between transfer earning and transfer payment. [2mks]
- ii. Mention two possible examples of transfer payments. [2mks]
- d) i. Define the term 'Underdevelopment' as used in economics. [1mk]
- ii. Outline three costs of economic growth. [3mks]
- e) i. What is a dual economy? [1mk]
- ii. Give three forms of dualism in an economy. [3mks]

SECTION B

2. a) Explain the features of monopolistic competitive market. [8mks]
- b) How does a Monopolistic firm determine out put, price and profits in both short run and long run? [12mks]
3. a) Explain the causes of structural unemployment in underdeveloped countries. [10mks]
- b) How can structural unemployment be minimized in under developed countries? [10mks]
4. a) Distinguish between a Surplus budget and a Deficit budget. [4mks]
- b) What is the role of a National Budget to an economy? [16mks]
5. a) Distinguish between the absolute advantage principle and comparative advantage theory of international trade. [4mks]
- b) Why do countries participate in international trade? [16mks]
6. a) What are the causes of cost –push inflation? [10mks]
- b) Explain the adverse effects of inflation to an economy.
7. a) What are the qualities of a good economic development plan? [10mks]

b) Discuss the factors which tend to limit the success of economic development planning in underdeveloped countries. [10mks]

END

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HISTORY OF SOUTH AFRICA 241/4

TIME: 2 hours

INSTRUCTIONS

Answer **four** questions

All questions carry equal marks.

1. a) What factors force the Khoisan into South Africa? [12mks]
b) How did the Khoikhoi relate with the Dutch? [13mks]
2. a) Explain the reasons for the Dutch expansion of their colony up to Fish River. [13mks]
b) Why did the Boers loose the cape to the British in 1795? [12mk]
3. a) Describe the formation of the Ndebele state by Mzilikazi. [10mks]
b) Explain the social, political and economic organization of Ndebele. [15mks]
4. a) Explain the factors that led to the formation of independent churches in South Africa. [12mks]
b) What problems did the Christian missionaries in South Africa face? [13mks]
5. a) Why did the Basuto clash with the British in the 1880? [13mks]
b) What were the results of this conflict? [12mks]
6. a) Why did Paul Kruger conflict with the Uitlanders in Transvaal in 1895? [13mks]
b) What were the results of this conflict? [12mks]
7. a) Explain the role of Sam Nujoma and SWAPO in the struggle for Namibia's independence. [13mks]
b) What problems did they face in the struggle? [12mks]
8. a) Why was the ANC formed in 1912? [10mks]
b) Describe its role in the Liberation struggle of South Africa. [15mks]

END

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RESOUREFUL MOCK 2018

HISTORY OF WEST AFRICA 241/2

TIME: 2 hours

Name.....Index No.....Stream.....

QUESTION					TOTAL
MARKS					

INSTRUCTIONS TO CANDIDATES

- Answer **four** questions.
- You must not answer more than four questions
- Any additional question(s) attempted **will not** be marked.
- All questions carry equal marks.

1. a) What were the contributions of Mansa –Musa in the growth and expansion of Mali? [13mks]
b) Why did Mali decline after the fall of Mansa Musa? [12mks]
2. a) Describe the origins of Hausa states. [10mks]
b) How were the Hausa states organized by the 19th century? [15mks]
3. a) Describe the origins of Dahomey kingdom. [10mks]
b) What was King Agaja's contribution to Dahomey between 1708 and 1740? [15mks]
4. a) What steps were taken to abolish slave trade in West Africa? [12mks]
b) Explain the factors that led to the development of legitimate trade in West Africa. [13mks]
5. a) Describe the activities of Samuel Ajayi Crowther in Nigeria up to 1891. [13mks]
b) How did these activities affect the people of West Africa? [12mks]
6. a) How did the British establish their rule in Nigeria between 1860 and 1914? [13mks]
b) What problems did the British face during this period? [12mks]
7. Describe the changes that took place in Nigeria up to 1945 in
 - a. Agriculture [12mks]
 - b. Transport and communication [13mks]
8. a) Explain the role played by Dr. Kwame Nkrumah to the achievement of Ghana's independence. [13mks]
b) What problems did he face between 1948 and 1957? [12mks]

END PRINTED

Name.....Stream.....

RESOUREFUL MOCK 2018

S.4 BIOLOGY PARCTICAL

TIME: 2 hours

1. You are provided with fruit specimens P, Q, R and S. Extract A₁ A₂ laboratory reagents, heat source and 5 test tubes.

a. Examine specimens P, Q, R and S.

i) Which plant structures are specimens P, Q, R and S? Give one reason.

Structure	Reason

ii) State the class of plants to which all specimens P, Q, R and S belong.

Class

- b. Using a sharp knife cut TRANSVERSELY specimen P, Q and R into two equal halves, then proceed and open specimen S longitudinally without dislodging the seeds. Basing on your observation, identify and describe the type of placentation on each specimen.

Specimen	Type of placentation	Description
P		
Q		
R		
S		

- c. Using a very sharp pencil, draw and label one half of specimen P and S in the space provided.

P

S

2. Squeeze one half of specimen P to obtain extract in test –tube and label it A₃.
Using extracts A₁, A₂ and A₃, carry out food tests to find out their chemical nature, following the procedure in the table below.

	Test	Procedure	Observation	Conclusion
1	Millions test	To 2cm ³ of A ₁ in a test tube add 2cm ³ of millions reagent and boil.		
2	Buired test	To 2cm ³ in a test tube add 1cm ³ of NaOH followed by drops of copper II sulphate		
3		To 2cm ³ of A ₂ in a test tube be add 2cm of Benedict and boil		
4		Repeat to 2cm ³ of A ₂ in test tube add 2cm ³ of HCl and boil after add 1cm ³ of NaOH followed by 2cm ³ of Benedict and re-boil.		
5		To 2cm ³ of DCPIP in a test tube add 3 drops of extract A ₃		

- b) List the type of food chemicals which were found in extracts.

Extract	Food chemical
A ₁	
A ₂	
A ₃	

c) State 3 uses of food chemical found in A₁

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State the deficiency disease caused due to lack of the food chemical found in A₁ and A₃

Extract	Food chemical	Deficiency disease
A ₁		
A ₂		

d) In test (4) what was the role of

i) HCl

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.....

.....

ii) NaOH

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.....

3. You are provided with specimens U, V and W.

a. Identify specimens U, V and W according to class and order.

Specimen	Class	Order
U		
V		
W		

b. All the 3 belong to the same phylum. Give 3 characteristic features that members of this possess.

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.....

c. Using a hand lens examine the hind leg of U carefully and draw it in the space below.

d. Using a hand lens, examine and draw features located on the thorax of specimen V.

e. Cut off the base outer and inner wings of specimen W. Draw the upper and lower wing in the space below.

State the functions of each wing.

	Function
Upper	
Lower	

END

RESOUREFUL MOCK 2018

S.6 BIOLOGY

PRACTICAL P530/3

TIME: 3¼ hours

INSTRUCTIONS

Attempt ***all*** questions

1. You are provided with a freshly killed specimen M.
 - a. Describe how any five features observed contribute to survival of specimen M in its habitat.
.....
.....
.....
.....
.....
 - b.
 - i. Measure the length of the following body structures;
Tailcm
Tail plus rest of the body.....cm
 - ii. Calculate the ratio of length of tail to length of rest of the body plus length of tail.
.....
.....
 - iii. Suggest the significance of this ratio on the life of this animal.
.....
.....
 - c. Observe the ventral view of the head of specimen M, draw and label the ventral side of the head to show the structures used for sensitivity.

- d. Dissect the specimen M and pin the skin. By further dissection display the structures used for food passage and storage of food in the abdominal cavity. Draw and label the structures displayed above plus the visible structures anterior to the abdominal region.

2. You are provided with food mixtures B₁ and B₂. Carry out the following tests and identify the food substances present in B₁ and B₂

Using B₁, test for the following food nutrients and record your observations and conclusion.

Tests	Observation	Deductions
Protein test		
Reducing sugar test		
Starch test		

Non reducing sugar test		
-------------------------	--	--

ii. Using solution B2, carry out the tests below and record your observations.

Tests	Observation	Deductions
Protein test		
Reducing sugar test		
Starch test		
Non reducing sugar test		
DCPIP test		

b) Collect 2ml of saliva and dilute it with an equal amount of water. Using 2 test tubes, add 1cm³ of solution that contained starch in each test tube.

In the first test tube add 1cm³ of saliva and to the second add 1cm³ of saliva and dilute sodium hydroxide.

Incubate the test tubes in a water bath maintained at 30°C – 40°C for 15 – 20 minutes. Remove the test tubes and carry out the iodine test.

Test procedure	Observation	Deduction
	Test tube 1	
	Test tube 2	

Explain your observations above.

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.....

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3. You are provided with specimen K and N which are inflorescence.

a. Describe the flower arrangement on specimen N.

.....

.....

b. Pick one flower from each inflorescence and examine it using a hand lens.
Describe the structure of each flower with respect to the specified parts as indicated in the table below.

Part of flower	Flower from specimen K	Flower from specimen N
Calyx		
Corolla		
Bracts		
Stamens		
Pistil		

c. Which peculiar features of specimen N are not found in a typical flower?

.....

.....

d. What is the ecological significance of the features in (c) to the plant from which specimen N was obtained.

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-
- e. Draw and label the external features of a floret from specimen N.

END

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S.6 PHYSICS P510/2

TIME: 2½ hours

INSTRUCTIONS TO CANDIDATES

Answer **five** questions, taking at least **one** from each of the sections **A**, **B**, **C** and **D**, but not more than **one** question should be chosen from either **A** or **B**.

Any additional question(s) answered will not be marked.

Mathematical tables and squared paper are provided.

Non-programmable scientific calculators may be used.

Assume where necessary:

Acceleration due to gravity, g	=	9.81 ms^{-2}
Speed of light in a vacuum, c	=	$3.0 \times 10^8 \text{ ms}^{-1}$
Electron charge, e	=	$1.6 \times 10^{-19} \text{ C}$
Electron mass	=	$9.11 \times 10^{-31} \text{ kg}$
Planck's constant, h	=	$6.6 \times 10^{-34} \text{ Js}$
Permeability of free space, μ_0	=	$4.0\pi \times 10^{-7} \text{ Hm}^{-1}$
Permittivity of free space, ϵ_0	=	$8.85 \times 10^{-12} \text{ Fm}^{-1}$
The constant $\frac{1}{4\pi\epsilon_0}$	=	$9.0 \times 10^9 \text{ F}^{-1} \text{ m}$
One electron volt (eV)	=	$1.6 \times 10^{-19} \text{ J}$
Avogadro's number N_A	=	$6.02 \times 10^{23} \text{ mol}^{-1}$
Resistivity of Nichrome wire at 25°C	=	$1.2 \times 10^{-6} \Omega\text{m}$
Specific heat capacity of water	=	$4.2 \times 10^3 \text{ Jkg}^{-1} \text{ K}^{-1}$

SECTION A

1. a) i. Describe how the focal length of a convex mirror can be measured using a convex lens of a known focal length. [4mks]
ii. The plane mirror, P, in figure 1 is adjusted to a position 20cm from the optical pin, the image of the pin in P coincides with its image in M.

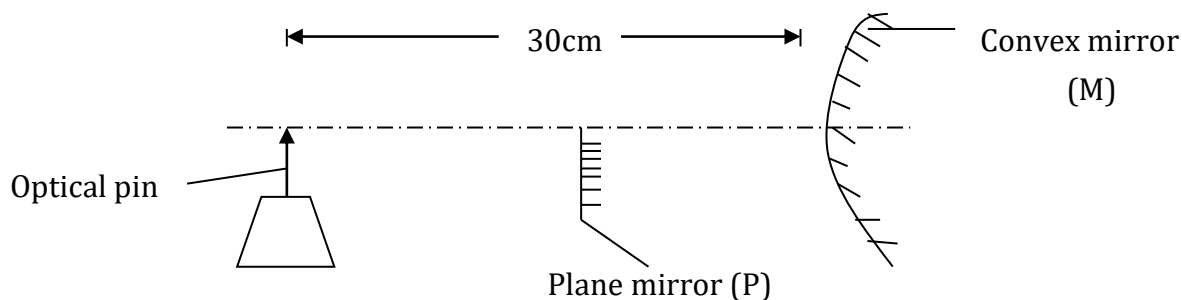


Fig. 1

Calculate the focal length of the convex mirror.

[4mks]

- b) A pin is clamped horizontally above a concave mirror with its tip along the principal axis. When the pin is adjusted, it coincides with its image at a distance R from the mirror. When a small amount of liquid of refractive index, n , is put in

the mirror, the pin again coincides with its image at a distance **R** from the mirror. Show that the refractive index, **n**, is given by

$$n = \frac{R}{R'} \quad [4\text{mks}]$$

- c) i. Explain the eye-ring as applied to a telescope? [2mks]
ii. Draw a ray diagram to show the formation of a final image in a Galilean telescope in normal adjustment. [3mks]
iii. Explain two advantages and one disadvantages of the telescope in (c ii). [3mks]
2. a) i. When does light pass through a prism symmetrically? [1mk]
ii. Find the angle of incidence, **i**, on an equilateral prism of refractive index 1.5 placed in air, when light passes through it symmetrically. [3mks]
iii. Describe what happens to the deviation of light passing through the prism in (a) (ii) when the angle of incidence is increased from a value less than **i** to a value greater than **i**. [2mks]
b) Describe how the refracting angle of a prism can be determined using optical pins. [5mks]
c) i. Draw a sketch ray diagram showing formation of the image of a finite size real object by a concave lens. [2mks]
ii. A concave lens of focal length 15.0 cm is arranged coaxially with a concave mirror of focal length 10.0cm, a distance of 4.0cm apart. An object is placed 20.0cm in front of the lens, on the side remote from the mirror. Find the distance of the final image from the lens. [4mks]
d) With the aid of a sketch ray diagram explain **spherical aberration** in concave lenses, and state how it is minimized. [3mks]

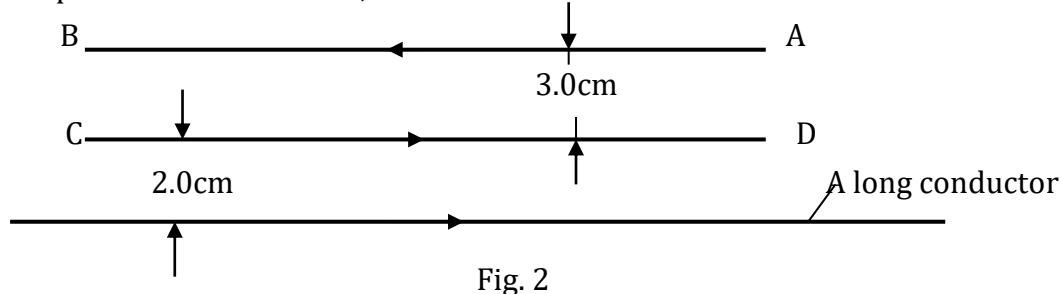
SECTION B

3. a) What is meant by the following as applied to waves?
i) Resonance [1mk]
ii) Frequency [1mk]
b) Explain with the aid of suitable diagrams, the terms fundamental note and overtone as applied to vibrating air in a closed pipe. [5mks]
c) Describe how you would determine the speed of sound in air using a resonance tube and several tuning forks. [5mks]
d) i. Explain the formation of beats. [2mks]
ii. Derive the expression for the beat frequency. [3mks]
e) Two observers **A** and **B** are provided with sources of sound of frequency 750Hz. If **A** remains stationary while **B** moves away at a velocity of 2.0ms^{-1} find the number of beats heard per second by **A**. (*Velocity of sound in air = 330ms^{-1}*) [3mks]
4. a) What is meant by diffraction? [1mk]
b) Explain using Huygen's principle, the diffraction pattern produced by a single slit. [6mks]

- c) Light of wavelength $5.0 \times 10^{-7} \text{ m}$ falls on a grating with 600 lines per mm. Determine the highest order of diffraction that can be observed. [4mks]
- d) i. Explain what is meant by the plane of polarization of light. [2mks]
 ii. A liquid of refractive index 1.3 is used to produce polarized light by reflection. Calculate the angle of incidence of light on the liquid surface. [2mks]
- e) i. Describe how the polarized light can be produced by reflection. [3mks]
 ii. State two uses of polarized light. [2mks]

SECTION C

5. a) i. What is the difference between a motor and a dynamo? [1mk]
 ii. Describe with the aid of a labeled diagram the structure and mode of operation of a d.c generator. [6mks]
 iii. Describe briefly the factors that determine the peak value of the induced e.m.f. [3mks]
 iv. How can a d.c generator be converted into an a.c generator? [1mk]
- b) Figure 2 shows two wires AB and CD of length 5.0cm each carrying a current of 10.0A in the direction shown. A long conductor carrying a current of 15A is placed parallel to the wire CD, 2.0cm below it.



- i) Calculate the net force on the long wire. [6mks]
 ii) Sketch the magnetic field pattern between the long wire and the wire **CD** after removing wire **AB**. Use the field pattern to define a neutral point. [3mks]
6. a) What is meant by the following as applied to the earth's magnetic field?
 i) Magnetic meridian [1mk]
 ii) Magnetic variation [1mk]
- b) Describe the structure and mode of action of the deflection magnetometer. [6mks]
- c) A circular coil of four turns and diameter 11cm has its plane vertical and parallel to the magnetic meridian of the earth. Determine the resultant magnetic flux density at the centre of the coil when a current of 0.35A flows in it.
(Take the horizontal component of the earth's magnetic flux density to be $1.6 \times 10^{-5} \text{ T}$) [4mks]
- d) i. Define **self-induction** and **mutual induction**. [2mks]
 ii. Give the causes of power loss in an **a.c.** transformer and state how each can be minimized. [4mks]

iii. Explain why the current in the primary coil of a transformer increases when the secondary is connected to a load. [2mks]

7. a) Define **root mean square (rms)** value of an alternating voltage. [1mk]

b) A resistor of resistance 100Ω is connected across an alternating voltage $V = 20 \sin 120 \pi t$

i) Find the frequency of the alternating voltage [1mk]

ii) Calculate the mean power dissipated in the resistor. [3mks]

c) i. Show that when an inductor is connected to an **a.c.** supply voltage of $V = V_0 \sin 2 \pi ft$, the resulting current lags the voltage by 90° . [4mks]

ii. Sketch on the same axes the variation with time of the voltage and current if a capacitor is connected to the voltage supply in (c i). [2mks]

d) i. Describe how a thermocouple meter works. [4mks]

ii. Explain any precautionary measure taken in the design of the thermocouple meter. [2mks]

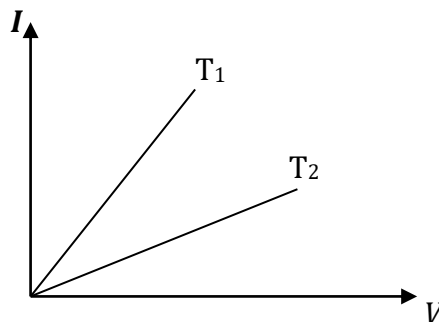
e) A capacitor of capacitance $60\mu F$ is connected to an a.c voltage supply of frequency 40Hz. An a.c ammeter connected in series with the capacitor reads 2.2A. Find the p.d across the capacitor. [3mks]

SECTION D

8. a) i. Define **electrical resistivity**. [1mk]

ii. Explain how length and temperature of a conductor affect its resistance. [4mks]

iii. Figure 3 shows the current-voltage graphs for a metallic wire at two different temperatures T_1 and T_2



State which of the two temperatures is greater and explain your answer. [3mks]

b) i. Derive the balance condition when using a metre bridge to measure resistance. [4mks]

ii. State two precautions taken to achieve an accurate measurement. [2mks]

c) Figure 4 shows two resistors P and Q of resistance 5Ω and 2Ω respectively connected in the two gaps of the metre bridge.

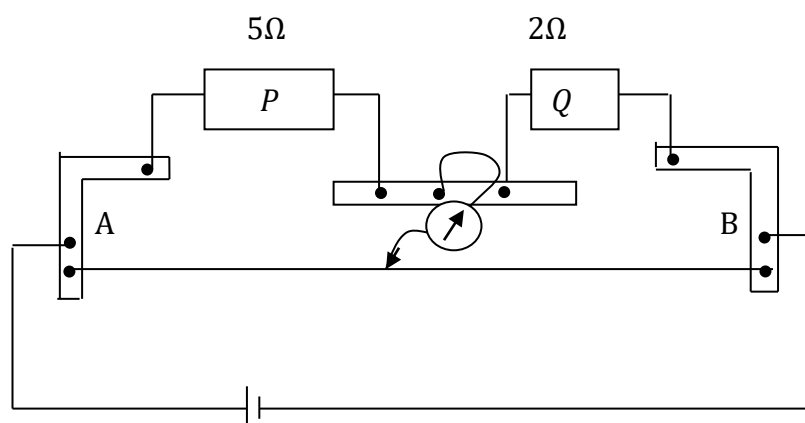


Fig. 4

A resistance X of cross-sectional area 1mm^2 is connected across P so that the balance point is 66.7cm from A . If the resistivity of wire X is $1.0 \times 10^{-5} \Omega\text{m}$ and the resistance wire AB of the metre bridge is 100cm long, calculate the length of X [4mks]

d) Explain how electrons attain a steady drift velocity when current flows through a conductor. [2mks]

9. a) i. Explain an **equipotential surface**. [4mks]
 ii. Give an example of an equipotential surface. [1mk]
 b) i. State **Coulomb's law**. [1mk]
 ii. With the aid of a sketch diagram, explain the variation of electric potential with distance from the centre of a charged metal sphere. [3mks]
 iii. Two metal plates A and B , 30cm apart are connected to a 5 kV d.c supply as shown in figure 5.

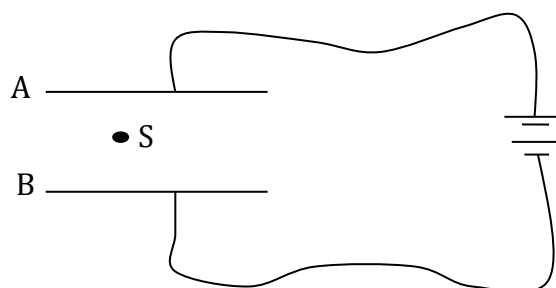


Fig. 5

When a small charged sphere, S , of mass $9.0 \times 10^{-3} \text{ kg}$ is placed between the plates, it remains stationary. Indicate the forces acting on the sphere and determine the magnitude of the charge on the sphere. [4mks]

- c) i. Define **electric field intensity**. [1mk]
 ii. With the aid of a diagram, explain electrostatic shielding. [4mks]
 d) Explain briefly why a neutral metal body is attracted to a charged body when brought near it. [2mks]

10. a) i. What is meant by **capacitance** of a capacitor? [1mk]
- ii. A parallel plate capacitor is connected across a battery and charged fully. When a dielectric material is now inserted between its plates, the amount of charge stored in the capacitor changes. Explain the change. [4mks]
- iii. Describe an experiment to determine the relative permittivity of a dielectric. [4mks]
- b) A network of capacitors of capacitances $40\mu\text{F}$, $50\mu\text{F}$ and $70\mu\text{F}$ is connected to a battery of 9V as shown in figure 6.

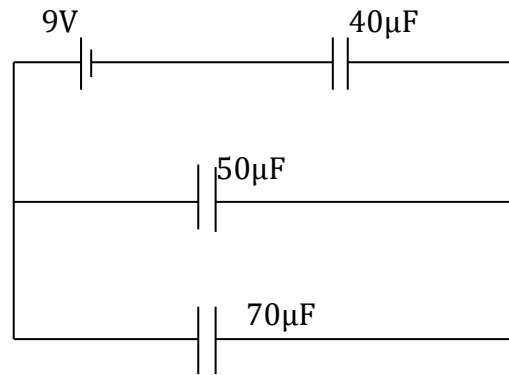


Fig. 6

Calculate

- i) Charge stored in the $50\mu\text{F}$ capacitor [5mks]
- ii) Energy stored in the $40\mu\text{F}$ capacitor [3mks]
- c) Explain **corona discharge**. [3mks]

END

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Name:

Centre/Index No.

Signature:

P525/3

CHEMISTRY

PAPER 3

June 2018

3 ¼ HOURS

RESOUREFUL MOCK 2018
Uganda Advanced Certificate of Education
CHEMISTRY

(PRACTICAL)

PAPER 3

3 hours 15minutes

Instructions to candidates

- Answer all questions
- Record your answers on this question paper in the spaces provided.
- Mathematical tables, slide rules and silent non-programmable calculators may be used.
- Reference books (i.e. text books, books on qualitative analysis, etc.) should not be used.
- Candidates are not allowed to start working with the apparatus for the first 15 minutes. This time is to enable candidates to read the question paper and make sure they have all the apparatus and chemicals that they may need.

FOR EXAMINER'S USE ONLY			
Q.1	Q.2	Q.3	TOTAL

1. You are provided with the following;

FA1; which is a solution of hydrochloric acid.

FA2; which is a solution of sodium hydroxide that was made by dissolving 1g of sodium hydroxide in 250 ml of distilled water.

FA3; which is a solution containing sodium hydrogen carbonate and sodium hydroxide.

Phenolphthalein indicator.

Methyl orange indicator.

You are required to

- (i) Standardize **FA1** using **FA2**.
- (ii) Determine the percentage composition of **FA3**.

Procedure A.

Pipette 25.0/20.0 cm³ of the **FA2** into a conical flask, add 1-2 drops of phenolphthalein indicator and titrate the resultant solution with **FA1** from the burette.

Repeat the titration to obtain consistent readings and record your results in table 1 below.

Results.

Volume of pipette used = cm³ ($\frac{1}{2}$ mk)

Table I

Final burette reading / cm ³			
Initial burette reading / cm ³			
Volume of FA1/ cm ³			

(3mks)

Volumes of FA1 used to calculate the average volume ($\frac{1}{2}$ mk)

.....

Average volume of FA1 used ($2\frac{1}{2}$ mks)

.....

.....

.....

QUESTIONS.

Calculate the;

- (i) Moles of FA2 that reacted with FA1. (3 mks)

.....

.....

.....

.....

.....

- (ii) Moles of FA1 that reacted hence molarity of FA1. (3 mks)

.....

.....

.....

.....

.....

.....

.....

Procedure B

- (a) Pipette 25.0/20.0 cm³ of the **FA3** into a conical flask, add 2-3 drops of phenolphthalein indicator and titrate the resultant solution with **FA1** from the burette until the mixture just changes to colourless. Record the results in **table II**
- (b) Pipette another 25.0/20.0 cm³ of the **FA3** into a conical flask, add 2-3 drops of methyl orange indicator and titrate the resultant solution with **FA1** from the burette until it turns red. Record the results in **table III**
- (c) Repeat the procedures (a) and (b) to obtain consistent readings.

Volume of pipette used = cm³ ($\frac{1}{2}$ mk)

	Table II (phenolphthalein)			Table III (methyl orange)		
Final burette reading/cm ³						
Initial burette reading/cm ³						
Volume of FA1 used/cm ³						

(6 mks)

Average volume (V_1) of **FA1** used with phenolphthalein indicator (table II)(2 mks)

.....

.....

Average volume (V_2) of **FA1** used with methyl orange indicator (table III) (2 mks)

.....

.....

QUESTIONS.

(a) Calculate the volume of **FA1** that reacted with

(i) Sodium hydroxide only. ($\frac{1}{2}$ mk)

.....

.....

(ii) Sodium hydrogen carbonate only. ($\frac{1}{2}$ mk)

.....

.....

(b) Hence determine the molar concentration of

(i) Sodium hydroxide in **FA3** (3 mks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

(ii) Sodium hydrogen carbonate in **FA3**. (3 mks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

- (06 mks)

[illegible]

- | TEST | OBSERVATION | DEDUCTION |
|--|-------------|-----------|
| a) Heat a spatula end –full of J strongly in an ignition tube until there is no further change | | [4mks] |
| b) Dissolve two spatula end full of J in about 8cm ³ of water. Keep both the Residue and filtrate | | [2mks] |
| c) Divide the filtrate into 6 portions
i) To the first portion add | | |

aqueous NaOH until in excess		[1½]
ii) To the second portion add aqueous NH_4OH drop wise until excess.		[02]
iii) To the third portion add aqueous potassium Cyanide drop wise until in excess.		[02]
iv) To the 4 th part add about 0.5cm^3 of Ammonium chloride solution followed by a few drops of ammonia solution and then a few drops of dimethyl glyoxime		[01]
v) To the fifth part add lead Nitrate solution		[01]
vi) To the last part add a few drops of barium Nitrate solution followed by some little Nitric acid		[1½]
d) The residue was washed in water and later dissolved in about 8cm^3 of dilute HNO_3		

		[04]
e) The resultant solution from (d) was divided into 6 parts. i) To the first part add aqueous Na OH drop wise until in excess		[1½]
ii) To the second part add aqueous Ammonia drop wise until in excess		[1½]
iii) To the third part, add a few drops of sodium carbonate solution		[01]
iv) To the fourth part add a few drops of ammonia solution followed by about 1cm ³ of ammonium chloride solution and some little disodium hydrogen phosphate solution		[01]
v) To the fifth part add a few drops of ammonia solution followed by 1cm of ammonium chloride solution followed		[01]
vi) To the 6 th part add a few drops of ammonia solution followed by disodium hydrogen phosphate		[01]

The cations present in J are.....and..... [01]

The Anions present in J are.....and[01]

3. You are provided with organic substance X. You are required to identify the nature of X. Carry out the tests below and record your observations and deductions in the table below.

TESTS	OBSERVATIONS	DEDUCTIONS
(a) Burn a small amount of X on a spatula.		
(b) To 2 cm ³ of X, add an equal volume of water. Shake and test with litmus.		
(c) Divide the remaining X into 4 portions. (i) To the first portion, add solid sodium carbonate.		
(ii) To the second portion, add a few drops of Brady's reagent.		
(iii) To the third portion, add acidified potassium dichromate solution and heat.		
(iv) To the fourth portion, add Tollen's reagent.		
(v) To the fifth portion, add 2cm ³ of Iodine solution followed by dilute sodium hydroxide until the brown colour of Iodine has disappeared. Heat and cool		

Comment on the nature of X

.....

RESOUREFUL MOCK 2018

S.6 DIVINITY P245/4

TIME: 2 hours 30 minutes

INSTRUCTIONS

*Attempt 4 questions only from **two** sections.*

Use relevant examples

SECTION A: SEX, MARRIAGE & FAMILY

1. a) Examine the ways which the facts about reproductive and sexual behavior were given to the young people in ATS. [12mks]
b) As a Christian discuss the essence of teaching young people the facts of reproductive and sexual behavior. [13mks]
2. a) With reference to a community you are familiar, examine the traditional courtship leading to the choice of a wife. [13mks]
b) As a student of CRE, discuss the weakness of modern Courtship. [12mks]
3. a) Discuss the grounds on which African traditional society permitted divorce. [13mks]
b) Examine the Christian view on divorce. [12mks]
4. a) Discuss the nature of extended families in ATS. [12mks]
b) Examine responsibilities of parents and children in according to Christian teaching. [13mks]

SECTION B: WORK, LEISURE & MONEY

5. a) Examine the circumstances that can make a Christian support a strike by workers. [13mks]
b) As a Christian, how would you advise a person frustrated with his/her work? [12mks]
6. a) Examine the determinants of a just price. [12mks]
b) To what extent should a Christian work for money? [13mks]
7. To what extent does leisure in traditional African agree with the Christian teaching on leisure? [25mks]
8. Working for money has changed the attitude of people towards one another. [25mks]

SECTION C: LAW AND ORDER

9. a) Assess the different types of laws in society. [12mks]
b) Analyze the importance of laws as tool for maintaining human relationship. [13mks]
10. "Politics and religions are mutually inclusive," as a Christian comment. [25mks]

11. a) "It is better to be dead than to rot in prison." As a Christian comment on this remark by a man convicted of murder and sentenced to life imprisonment.

[13mks]

b) What are the effects of imprisonment on a criminal on his ore family? [12mks]

12. Comment on the view that all S.6 leavers should be taken for military training and offer a 2 years service before joining University.

[25mks]

END

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S.6 EUROPEAN HISTORY

P210/3 [1789 – 1970]

TIME: 3 hours

INSTRUCTIONS

Answer any **four** questions

All questions carry equal marks

1. Account for the collapse of Ancient regime by 1793. [25mks]
2. “It was mainly Britain that was responsible for the downfall of Napoleon I.”
Discuss [25mks]
3. “Without External assistance, Italian unification would not have been possible”. Discuss [25mks]
4. How far was Russia responsible for outbreak of the Crimean war?
[25mks]
5. To what extent was Serbia responsible for outbreak of World War I?
[25mks]
6. Assess the achievements of Versailles settlement between 1919 and 1939.
[25mks]
7. Examine the causes and effects of the 1917 Bolshevik revolutions in Russia. [25mks]
8. Why did the League of Nations fail to maintain world peace between 1920 and 1945? [25mks]
9. How did Britain’s appeasement policy contribute to the outbreak of World War II? [25mks]
10. Explain the challenges faced by United Nations Organization (UNO) between 1945 – 1970. [25mks]

END

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S.6 LITERATURE P310/3

[NOVELS]

TIME: 3 HOURS

INSTRUCTIONS

Attempt **three** questions in all

The context question is compulsory

Do not attempt two questions from the same book

SECTION A

1. CHARLES DICKENS: *Oliver Twist*

They converse for sometime in whispers. Though nothing of the conversation was distinguishable beyond a few disjointed words here and there, a listener might easily have perceived that Fagin appeared to be defending himself against some remarks of the stranger; and that the latter, was in a state of consideration irritation. They might have been talking, thus for a quarter of an hour or more, when monks by which name the Jew had designated the strange man several times in due course of their colloquy –said, raising his voice a little.

“I tell you again, it was badly planned. Why not have kept him here among the rest and made a sneaking sniveling pickpocket of him at once?”

“Only hear him!” exclaimed the Jew, shrugging his shoulders.

“Why, do you mean to say you couldn’t have done it, if you had chosen?” demanded Monks, sternly. “Haven’t you done it, with other boys, scores of times?” If you had had patient of twelvemonth at most, couldn’t you have got him convicted, and sent safely out of the kingdom: perhaps for life?”

“Whose turn would that have served my dear?” Inquired the Jew humbly.

“Mine,” replied Monks

“But not mine,” said the Jew, submissively. “He might have become of use to me. When there are two parties to bargain it is only reasonable that the interest of both should be consulted; is it my good friend?”

“When then,” demanded Monks

“I saw it was not easy to train him to the business,” replied the Jew, “he was not like other boys in the same circumstances.”

“Curse him, no!” muttered the man, or he would have been a thief, long ago.”

“I had no hold on him to make worse,” pursued the Jew anxiously, watching the countenance of his companion. His hand was not in it. I had nothing to frighten him with which was always a must have in the beginning, or we

labour in vain. What could I do?" send him out with the Dodger and Charley? We had enough of that, at first, my dear; I trembled for us all."

"That was not my doing," observed the Monks.

"No, no, my dear!" renewed the Jew. "And I don't quarrel with it now, because if it had never happened, you might never have clapped eyes upon the boy to notice him, and so led to the discovery that it was him you were looking for. Well! I got him back for you by means of the girl; and then she begins to favour him.

"Throttle the girl!" said Monks, impatiently now, my dear," replied the Jew, smiling, and besides, that sort of thing is not in our way; or, one of these days, I might be glad to have it done. I know what these girls are, Monks, well. As soon as the boy begins to harden, she will care for him than for a block of wood. You want him made a thief. If he is alive, I can make him from this time; and if – if –" said the Jew, drawing nearer to the other, - "it is not likely, mind, - but if the worst comes to the worst, and he is dead –"

"It is no fault of mine if he is!" interposed the other man, with a look of terror and clasping the Jew's arm with trembling hands. "Mind that Fagin! I had no hand in it. Anything but his death, I told you from the first. I won't shed blood; it is always found out, and haunts a man beside if they shot him dead, I was not the cause; do you hear me? Fire this infernal den! What is that?"

"What! Cried the Jew, grasping the coward round the body, with both arms, as he sprung to his feet. "Where?"

"Yonder!" replied the man glaring at the opposite wall. "The shadow! I saw the shadow of a woman, in a cloak and bonnet, pass along the wainscot like a breath!

Questions

- State what immediately precedes this conversation. [6mks]
- Describe the character of Oliver Twist and Monks as portrayed in this passage. [10mks]
- Identify the themes in the passage and show how they have been depicted. [08]
- "The shadow" whose shadow is it? What is the contribution of that shadow to the plot of the novel [10mks]

SECTION B

GRAHAM GREENE: *The heart of the matter*

- Discuss the role of Wilson in the book The Heart of the matter.
- Discuss the use of flash backs in The Heart of the matter.

SECTION C

OYONO FERDINAND: *Houseboy*

- How do the whites destroy Toundi refer closely to the novel.

5. Discuss Oyono's use of symbolism in the novel Houseboy.

SECTION D

OSI OGBU: *The Moon also sets*

6. Discuss the challenges faced by women in *The Moon also sets*. [33mks]
7. How does the writer portray the theme of hypocrisy in book *The Moon also sets*? [33mks]

END

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S.4 MATHEMATICS 456/1

TIME: 2½ hours

SECTION A

Attempt **all** questions

1. Given that $X * Y = (X - Y)^2$, solve for X if $X * 2 = 36$. [4mks]
2. The bearing of town K from town h is 230° . Find the bearing of town h from k. [4mks]
3. Given that $\sin \theta = \frac{24}{25}$ for θ being an obtuse angle, find the value of ;
 - i) $\cos \theta$
 - ii) $\tan \theta$
4. Solve the inequality $\frac{3}{2} - \frac{3}{2} \geq 8 + \frac{x}{2}$ and represent the solution set on the number line.
5. If $M = w\sqrt{R^2 - XR}$, make X the subject of the formula.
6. One of the opposite angles of a cyclic quadrilateral is thrice the other. Find the two angles.
7. Use matrix method to solve the pair of simultaneous equation below.
$$\begin{aligned} 3x + 5y &= 1 \\ 7x + 3y &= 11 \end{aligned}$$
8. The mean weight of 6 boys is 48kg. The seventh boy joined the group and their group and their mean changed to 52kg. Find the weight of the seventh boy. [4mks]
9. Given that $M = \begin{pmatrix} 4 & -1 \\ 2 & 3 \end{pmatrix}$ Find
 - i) m^2 [2mks]
 - ii) $\det m^2$ [2mks]
10. Solve the equation $\frac{(n-5)}{4} - \frac{(6-2n)}{9} = \frac{(2n-4)}{3}$ [4mks]

SECTION B

Attempt any **five** questions in section **B**

11. Draw a graph on the same axis of $y = 2x^2 - 3x - 5$ and $y = 1 - 2x$. For $-2 \leq X \leq 3$ (use a scale of 2cm: 1 unit on the horizontal and 1cm: 1unit on the vertical scale)
 - a. From your graph, solve the equation
 - i) $2x^2 - x - 6 = 0$
 - ii) $2x^2 - 3x - 3 = 0$
12. The table below shows the distribution of masses of 40 babies born in the histogram in the month of October.
 - a. Copy and complete the table below.

Mass	Mid mark	Frequency	Deviation (d=X-A)	Fd
------	----------	-----------	-------------------	----

	(x)	(f)		
20 – 24	22	6	-15	-90
25 – 29		4		
30 – 34	32	8		
35 – 39		10		0
40 – 44		5		
45 – 49		5		
50 – 54	52	2	15	
		$\Sigma f =$		$\Sigma fd =$

State

- The class width
 - The modal class
- b. Calculate the mean mark using the assumed mean.

13. Bimbo, Jenny and Elijah went shopping one day at a shop to buy a two kilogram packet of maize. Half-litre packets of milk, 500ml can of soda and 500g of Omo detergents. Jenny bought 4 packets of milk, one flour, 4 packets of Omo and one packet of milk.

- Write this information in a 3 x 4 matrix. [2mks]
- If each packet of maize flour is sh.4500, shs. 1400 for a packet of milk, shs. 1500 for a can of soda and 3300 for a packet of Omo detergent, form a 4 x 1 matrix for the cost of each item. [2mks]
- Use matrix multiplication to calculate how much each person spent. [4mks]
- At another shop, the priced of the same items were sh.4,200 a packet of maize flour 1200sh. A packet of milk shs. 1400, a can of soda and shs 3500 packet of Omo. Find how much each spent hence how much each would save.

14. A triangle PQR has vertices P (2, 3), Q (3, 5) and R (6, 1)

- $P'Q'R'$ is the image of PQR after a reflection in the line $Y = 0$. Draw both triangles on the same axis and write the images of $P'Q'R'$ [5mks]
- Triangle $P'' Q'' R''$ is the image of $P' Q' R'$ under a transformation matrix $\begin{pmatrix} -2 & 0 \\ 0 & 2 \end{pmatrix}$. Find the coordinated of $P'' Q'' R''$
- Find the matrix of a single transformation which maps PQR onto $P' Q' R'$ [3mks]

15. A piece of wire 26cm long is cut into two parts. The first part is bent to form a square. The second part bent to form a rectangle having length xcm and width 3cm.

- If the sum of the areas of the square and rectangle is Bcm^2 , show that
$$B = \frac{x^2}{4} - 2x + 25$$
 [8mks]
- Given that $B = \frac{85}{4} cm^2$, solve the equation. Hence find the side of a square.

16. A school hired a bus and a min-bus to transport students to a study tours, each trip of the bus cost shs.40,000 and that of the min-bus cost shs.25,000. The bus has a capacity of 42 students and a min-bus 14 students.

All the 126 students contributed of sh. 200,000 and level to go for the tour. The min-bus has to make more trips than the bus. If X and Y represent the number of trips made by the bus and the min-bus respectively

- a. Write down five inequalities representing the given information [5mks]
- b. i) Plot the inequalities on the same axes [3mks]
ii) By shading the unwanted region, show the region satisfying all the inequalities. [2mks]
- c. Use the graph to find the number of trips each vehicle should make so as to spend the least amount of money. [2mks]

17. The bearing of port k to port I is 053 while the bearing of M from h is 210° . Port N is due East of M and a distance of 60km a part. K to L and L to M is 58km and 72km respectively. Use a scale of 1cm to represent 10km, draw an accurate diagram to represent the four ports. [8mks]

- i) Find the shortest distance between K to N in km
- ii) Find the bearing of port N from K

END

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S.4 ENGLISH 112/1

TIME: 2 HOURS

*Attempt **two** questions*

Question one is compulsory.

SECTION A [20 marks]

For the following compulsory question 1, write a composition of 200 -300 words.

1. You are required to speak on the theme AIDS CAN BE AVOIDED on the WORLD AIDS DAY celebrations held at your school.

Write the speech you would deliver to the guests and participants.

You may include some or all of the following.

- What is AIDS
- Impact of AIDS to communities
- How it can be prevented
- Encouraging abstinence
- Listening to advice

SECTION B [20 marks]

Choose only one of the following topics and write a composition of 500 -600 words

2. Write a story beginning "I suspected the head teacher had good news for me....."
3. Write a story entitled 'Bizarre'
4. Pregnant girls should not be allowed in school. Do you agree?
5. The computer has done more harm than good! Do you agree?
6. Explain the disadvantages and advantages of using cell phones by students at school.

END

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S.6 PURE MATHEMATICS

P425/1

TIME: 3 hours

Uganda Advanced Certificate of Education

PURE MATHEMATICS

Paper 1

3 hours

INSTRUCTIONS TO CANDIDATES

Answer **all** the **eight** questions in section **A** and any **five** from section **B**

All necessary working must be shown clearly.

Begin each answer on a fresh sheet of paper.

Graph paper is provided.

SECTION A

1. Solve the simultaneous equations using Echelon's method.

$$2x + 3y + 4z = 8$$

[5mks]

$$3x - 2y - 3z = -2$$

$$5x + 4y + 2z = 3$$

2. Solve the inequality: $\frac{x-1}{x-2} > \frac{x-2}{x+3}$

[5mks]

3. The concentration C of an antibiotic in the blood stream after time t hours is given by;

$$C = \frac{5t}{1 + \frac{t^2}{K}}, \text{ if the maximum concentration is reached after 6 hours, find the value}$$

of K .

[4mks]

4. Given that $X = \sec \mu + \tan \mu$ and $y = \sec \mu - \tan \mu$, by eliminating μ from the two equations, show that $XY = 1$

[5mks]

5. Expand $(1 - 2x)^{-1/2}$ as far as the term in X^3 , use your expression to obtain the value of $\frac{1}{\sqrt{0.998}}$

[5mks]

6. Evaluate $\int_0^{\frac{1}{\sqrt{3}}} \frac{e^x}{1+e^{2x}} dx$

[5mks]

7. Given that a and b are the roots of the equation $X^2 - PX + 2 = 0$, form a quadratic equation with roots $a^2 + \frac{a}{b}$ and $b^2 + \frac{b}{a}$

[5mks]

8. A chemical factory wishes to make cylindrical container of thin metal to hold 10cm^3 . Using the least possible area of metal, if the outside surface area is $S \text{ cm}^2$ and the radius $r \text{ cm}$, show that $S = 2\pi^2 + \frac{20}{r}$ and find the required radius and height of the container. (leave π in your answer)

[6mks]

SECTION B

9. a) A conic section is given by $X = 4\cos \theta$ and $y = 3\sin \theta$. Show that the conic is an ellipse and determine its eccentricity. [5mks]
 b) Find the equations of the tangent to the circle $X^2 + y^2 - 6x + 4y + 5 = 0$ at the points where it meets the X -axis. [7mks]
10. a) Use Maclaurin's theorem to expand $\ln(1 + \sin x)$ as far as the term in X^3 [6mks]
 b) Expand $(1 - X)^{\frac{1}{3}}$ as far as the X^3 . Use your expansion to deduce $3\sqrt[3]{24}$ correct to 3 S.f [6mks]
11. a) i. Express each of the following complex numbers $Z_1 = (1 - i)(1 + 2i)$ $Z_2 = \frac{2+6i}{3-i}$ and $Z_3 = \frac{-4i}{1-i}$ in the form $a + bi$
 ii. Find the modulus and argument of $Z_1 Z_2 Z_3$ given in (a i) above. [6mks]
 b) Find the square root of $12i - 5$ [6mks]
12. Find:
 i) $\int \ln(X^2 - 4)dx$ [4mks]
 ii) $\int \frac{dx}{3-2\cos x}$ [4mks]
 iii) Use the substitution of $X = \frac{1}{u}$ to evaluate $\int_1^2 \frac{dx}{X\sqrt{X^2-1}}$ [4mks]
13. a) Prove that $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} = 2R$, where ABC has all the angles acute and R is the radius of the circle. [7mks]
 b) From the top of vertical cliff 10m high, the angle of depression of ship A is 10° and of ship B 15° . The bearings of A and B from the cliff are 162° and $202\frac{1}{2}$ respectively. Find the bearing of B from A. [5mks]
14. a) Find the Cartesian equation of the plane A (0, 3, -4), B (2, -1, 2) and C = (7, 4, -1). Show that Q (10, 13, -10) lies in the plane. [6mks]
 b) Express the equation of the plane in (a) in the scalar product form. [2mks]
 c) Find the area of ABC in (a) above. [4mks]
15. The curve with equation $y = \frac{ax+b}{X(X+2)}$ where a and b are constants, has zero gradient at the point (1, -2)
 i) Find the values of a and b [3mks]
 ii) Show that the gradient is also equal to zero at the point $(-\frac{1}{2}, -8)$ [2mks]
 iii) Find the equation of the asymptotes of the curve. [3mks]
 iv) Sketch the curve [4mks]
16. Express $f(x) = \frac{6x}{(X-2)(X+4)^2}$ into partial fractions hence evaluate $\int f(x)dx$ [12mks]

END

RESOUREFUL MOCK 2018

S.6 HISTORY P210/1

TIME: 3 hours

INSTRUCTIONS

Answer **four** questions

Indicate questions answered

Question					Total
Marks					

1. Assess the role of the Pan African Movement (PAM) in the decolonization of Africa. [25mks]
2. How far were the weaknesses of the Egyptian monarchy responsible for the 1952 Coup? [25mks]
3. Discuss the causes and effects of the 1947 civil war in Madagascar. [25mks]
4. Assess the achievements of the Non –Aligned Movement (NAM) since 1955. [25mks]
5. Examine the steps that have been taken by the independent African leaders to revive African culture. [25mks]
6. Account for Biafra’s failure to secede from the rest of Nigeria by 1970. [25mks]
7. Examine the contribution of Movimento Popular de Libertacao De Angola (MPLA) to the liberation of Angola. [25mks]
8. Examine the role of the Organization of African Unity (O.A.U) towards the collapse of Apartheid in South Africa. [25mks]
9. Assess the impact of military rule in the modernization of Ethiopia between 1974 – 1991. [25mks]
10. How has Neo –colonialism affected the development of any one African country since independence? [25mks]

~~DO YOUR UTMOST~~

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S.6 HISTORY P210/2

TIME: 3 hours

INSTRUCTIONS

Answer **four** questions taking at least **one** from each section

SECTION A

1. Account for the survival of either Iteso or Gana during Pre-colonial period.
[25mks]
2. Assess the role of a family in the social and economic organization any pre-colonial East African society by the early 19th century. [25mks]
3. "The trading activities in East Africa were primarily responsible for the growth and expansion of Buganda Kingdom during Pre-colonial period." Discuss. [25mks]

SECTION B

4. Account for the rapid growth and development of interior market and trading centers during pre-colonial period in East Africa. [25mks]
5. Explain the factors responsible for religious – political conflicts in Buganda between 1888 -1990. [25mks]
6. Assess the impacts of the Missionary activities in the socio-economic development of East Africa. [25mks]
7. "The land grievances were largely responsible for racial tensions in Kenya during the colonial period." Discuss. [25mks]
8. Assess the role of foreign non –governmental organizations in the social and economic transformation of East Africa since independence. [25mks]
9. Explain the factors responsible for the failure of Dr. Milton Obote's common man's charter. [25mks]
10. "The collapse of the East African community (EAC) in 1977 was inevitable." Discuss. [25mks]

~~DO YOUR UTMOST~~

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RESOUREFUL MOCK 2018

S.4 HISTORY 241/1

TIME: 2 HOURS

INSTRUCTIONS

Attempt 4 questions only

Use relevant illustrations where necessary.

1. a) What is meant by the term Zenji Empire? [12mks]
b) How did people in Zenji Empire organize themselves before 15th century? [13mks]
2. a) Describe the migration and settlement of the Bantu into East Africa. [15mks]
b) How were the Cushitic people affected by the Bantu migration? [10mks]
3. a) How did the Portuguese establish themselves at the coast of East Africa by 1498 -1510? [13mks]
b) Explain why the Portuguese lost control over the coast. [12mks]
4. Explain the social and economic organization of the following
 - a. Kikuyu [12mks]
 - b. Nyamwezi [13mks]
5. a) Describe the steps taken to abolish slave trade in East Africa during the 19th century. [12mks]
b) How did its abolition affect people of East Africa? [13mks]
6. a) What methods were used by European powers to acquire colonies in East Africa during the 19th century? [12mks]
b) Explain the effects of Scramble and partition of East Africa. [13mks]
7. a) Why did the religious sects in Buganda rise against each other by 1885? [12mks]
b) What impact did they bring on the people of East Africa? [13mks]
8. a) Explain the causes of the uprising in Kenya between 1952 -1956. [12mks]
b) How did it affect people in Kenya? [13mks]
9. a) How did the German administer Tanganyika up to 1941? [12mks]
b) What changes were introduced in the administration of Tanganyika after 1920? [13mks]
10. a) Why was the Kalindini railway line built? [12mks]
b) Describe the development of this railway system in Uganda up to 1965. [13mks]

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S.6 BIOLOGY paper 1

TIME: 2½ HOURS

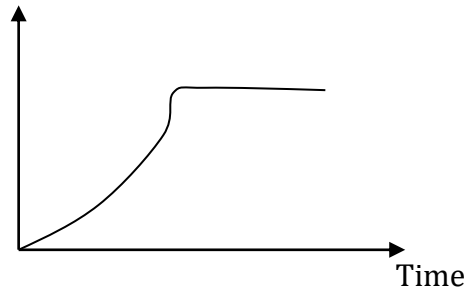
INSTRUCTIONS

Attempt all questions in section A and section A

For section A, circle the correct alternative either A, B, C or D and for section B write the answers in the spaces provided.

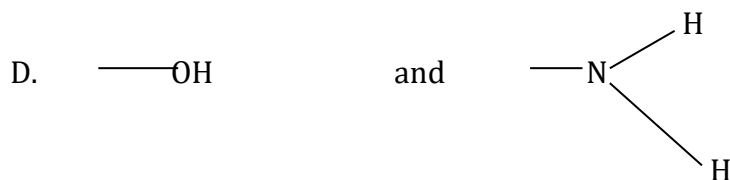
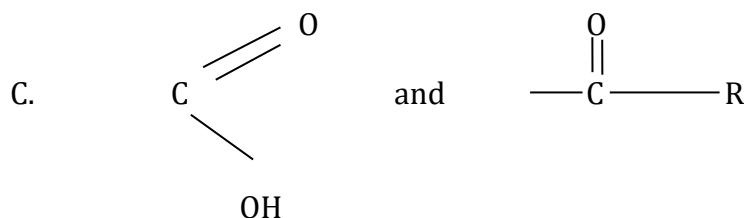
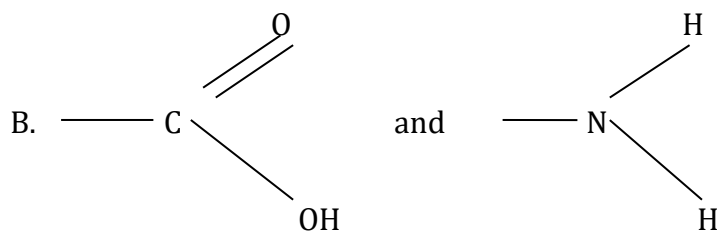
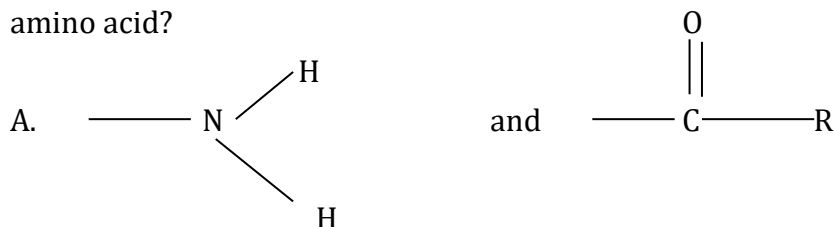
SECTION A

1. Which part of the curve in the diagram below best represents the carrying capacity of the environment for the population?



- A. B B. C C. D D. E
2. Which of the following organelles modifies and packages for secretion the materials produced by the ribosomes?
- A. The chloroplast C. the nucleus
B. The Golgi apparatus D. the nucleolus
3. Members of which of the following are the major primary producers in the marine ecosystem?
- A. Diatom B. Sponges C. Sporozoans D. Yeasts
4. Gas exchange in all living things requires:
- A. Gill C. Tracheoles
B. Lungs D. moist membranes
5. Which of the following best supports the statement that mitochondria are descendants of endo-symbiotic bacteria like cells?
- A. Mitochondria and bacteria possess similar ribosomes and DNA
B. Mitochondria and bacteria possess similar nuclei
C. Glycolysis occurs in both mitochondria and bacteria
D. Both mitochondria and bacteria have microtubules
6. Membranes are components of all of the following EXCEPT:
- A. Microtubule C. Mitochondrion
B. Golgi apparatus D. Lysosome
7. Which of the following best characterizes the reaction represented:
- $A + B + \text{energy} \longrightarrow AB$
- A. Hydrolysis reaction C. Endergonic reaction
B. Catabolism reaction D. Oxidation –reduction reaction
8. Which of the following occurs during mitosis but not during meiosis?

- A. The chromosomes are pulled to opposite poles of the spindle apparatus
 B. The chromatids of each chromosome are separated
 C. The nuclear envelop breaks down
 D. Both synapsis and crossing over take place
9. In a mesophyll cell of a leaf, the synthesis of ATP occurs in which of the following
- i) Ribosomes
 ii) Mitochondria
 iii) Chloroplasts
- A. i) only C. iii) only
 B. ii) only D. ii) and iii) only
10. oxygen consumption can be used as a measure of metabolic rate because oxygen is:
- A. necessary for ATP synthesis by oxidative phosphorylation
 B. necessary for replenish glycogen levels
 C. necessary for fermentation to take place
 D. required by all living organisms
11. Which one of the following functional groups characterizes the structure of an amino acid?



12. Prokaryotic and eukaryotic cells generally have which of the following features in common?
 - A. Membrane bound nucleus
 - B. A cell wall of cellulose
 - C. Ribosomes
 - D. Flagella and cilia that contain microtubules
13. Which of the following is primary responsible for cell elongation, gravitropism, and an apical dominance in plants?
 - A. Auxin
 - B. Gibberellin
 - C. Cytokinin
 - D. Ethylene
14. Which of the following groups contains a prokaryotic organism capable of surviving the greatest extremes in temperature or salt concentration?
 - A. Protista
 - B. Archaeobacteria
 - C. Plantae
 - D. Fungi
15. Which of the following is least likely to result in a release of epinephrine (adrenaline) from the adrenal glands?
 - A. Competing in an athletic event
 - B. Going out on a first date
 - C. falling asleep during a lecture
 - D. swimming in a very cold pool
16. A large stand of aspen trees may be a group of genetically identical individuals produced by vegetative reproduction such a collection of individuals is called a
 - A. Family
 - B. hybrid
 - C. clone
 - D. genus
17. Plant stems bend towards a light source as a result of increased
 - A. Chlorophyll synthesis on the side of the stem near the light source
 - B. Cell elongation on the side of the stem away from the light source
 - C. Cell division on the side of the stem away from the light source
 - D. Cell division on the side of the stem near the light source
18. All of the following are typical components of the plasma membrane of eukaryotic cell except.
 - A. Glycoprotein
 - B. Integral proteins
 - C. Cholesterol
 - D. Cytochromes
19. Which of the following is best observed by using a compound light microscope?
 - A. A eukaryotic cell
 - B. A virus
 - C. A DNA sequence
 - D. A nuclear pore
20. In plants the initiation of flowering in response to photo period is triggered by changes in
 - A. Ethylene
 - B. Gibberellic acid
 - C. Cytokinin
 - D. Auxin
21. The gametophyte is the dominant generation in which of the following plants?
 - A. Mosses
 - B. Monocots
 - C. ferns
 - D. Gymnosperms
22. Carbon dioxide is transported in human blood primarily in which of the following ways?
 - A. As oxyhaemoglobin
 - B. Attached to plasma proteins
 - C. attached to amino group of haemoglobin
 - D. as bicarbonate ions
23. Nuclear division in which the chromosome number is reduced from $2n$ to n is part of the life cycle of all the following organisms except
 - A. Molds
 - B. Ferns
 - C. Insects
 - D. Bacteria
24. The driving force for the movement of matter in the phloem of plants is

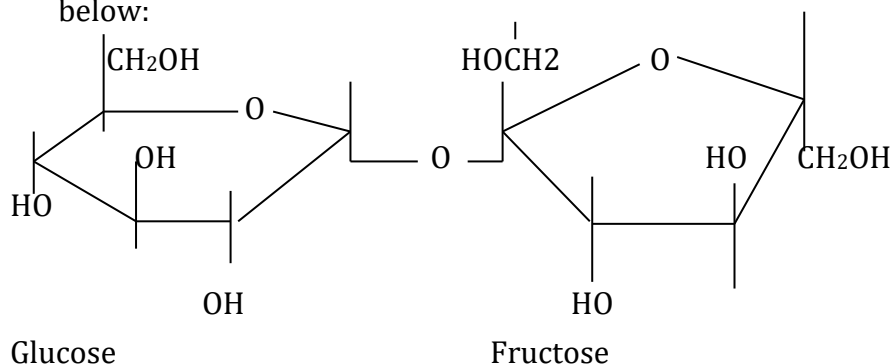
- A. Gravity
 - B. A difference in osmotic potential between source and sink
 - C. Root pressure
 - D. Adhesion of food sieve tube elements
25. Which of the following groups is best characterized as being eukaryotic and heterotrophic and having chitinous cell walls?
- A. Plantae
 - B. Animalia
 - C. Fungi
 - D. Monera
26. During respiration, most ATP is formed as a direct result of the new movement of:
- A. Potassium against a concentration gradient
 - B. Protons down a concentration gradient
 - C. Electrons against a concentration gradient
 - D. Sodium ions into a cell
27. The rate of flow of water through the xylem is regulated by:
- A. The force of transpiration pull
 - B. Passive transport by the pith
 - C. The number of companion cells in the phloem
 - D. Active transport by tracheid and vessel cells.
28. On a sunny day the closing of stomata in plant leaves results in:
- A. A decrease in CO₂ intake
 - B. A shift from C₃ photosynthesis to C₄ photosynthesis
 - C. An increase in transpiration
 - D. An increase in the rate of production of starch
29. Which of the following is the most likely explanation for a high rate of crossing over between two genes?
- A. The two genes are both located near the centromere
 - B. The two genes are far apart on the same chromosome
 - C. The two genes code for the same protein
 - D. The two genes are on different chromosomes
30. Many parasitic flatworms have an intermediate host. This indicates that the
- A. Flat worms can not infect humans
 - B. Larval flat worms infect only juveniles of species
 - C. Flat worm larvae are parasitic on their parents
 - D. Larval flat worms infect one species, where as adults infect another species.
31. Red algae can grow at greater ocean depths than most other algae can because red algae are
- A. Specialized for absorbing red wave lengths of light for photosynthesis
 - B. Specialized for absorbing ultra violet wave length of light for photosynthesis
 - C. Specialized in absorbing blue wave length of light for photosynthesis
 - D. Adapted for chemosynthesis rather than photosynthesis
32. Which of the following is an example of active transport across a membrane?
- A. The movement of water from a nephron into the collecting duct of the kidney

- B. The movement of water from the inside of a cell into a surrounding hypertonic solution
 - C. The movement of H^+ into a thylakoid disc during photosynthesis
 - D. The movement of Na^+ into a neuron as a nerve impulse is generated
33. Which of the following cellular processes is occupied with the hydrolysis of ATP?
- A. Facilitated diffusion
 - B. Osmosis
 - C. not influx into a nerve cell
 - D. Active transport
34. Which of the following cells would most likely have the greatest concentration of densely packed rough endoplasmic reticulum?
- A. An amoeba engulfing small ciliates
 - B. A bioluminescent bacterial cell
 - C. A pancreatic cell engaged in the production of digestive enzymes
 - D. An epithelial cell whose DNA is replicating before mitosis
35. In which of the following pairs are the organisms most closely related taxonomically?
- A. Mushroom.....oak tree
 - B. Spider crab
 - C. bacterium.....paramecium
 - D. sea star (star fish).....clam
36. Gibberellic acid stimulates the cells of germinating grass seeds to produce mRNA molecules that code for hydrolytic enzymes. In this case the rate of gibberellic acid can best be described as
- A. A regulator of gene activity
 - B. A stimulator of hydrolase secretion
 - C. A stimulator of DNA replication
 - D. An activator of translation
37. Which of the following processes is carried out more efficiently by a C_4 plant than by a C_3 plant?
- A. Light absorption
 - B. Fixation CO_2
 - C. Transport of sugars
 - D. Photolysis
38. Which of the following pathways for the transformation of cellular energy most likely evolved first?
- A. Calvin cycle
 - B. C_4 photosynthesis
 - C. Citric acid (Krebs cycle)
 - D. Glycolysis
39. Which of the following characteristics is common to all vascular plants that exhibit an alternation of generations in their life cycle?
- A. Large independent gametophytes
 - B. Fertilization in water
 - C. Multicellular sporophytes
 - D. Seed production
40. A student used a light microscope to observe a cell and correctly decides that it is a plant cell because;
- A. It has a large central vacuole
 - B. Ribosomes are visible
 - C. centrioles are present
 - D. a cell membrane is present

SECTION B

41. A plant contains a variety of carbohydrates that differ in structure and function.

- a) The disaccharide sucrose is abundant in plants. it consists of a glucose and a fructose molecule joined by a glycosidic bond, as shown in the diagram below:



- i) Name the type of reaction that forms glycosidic bonds between monosaccharides [2mks]

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- ii) Describe the glycosidic bond linking glucose and fructose in sucrose as shown in the diagram. [2mks]

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- b) The storage carbohydrate starch exists as large, insoluble granules that contain two types of polysaccharide, amylose and amylopectin, formed from glucose monomers.

- i) Give three differences between amylose and amylopectin. [3mks]

Amylose	amylopectin

[4mks]

[illegible]

Acetylcholine $\xrightarrow{\text{Acetyl cholinesterase}}$ acetate + choline

a. i) What property of an acetylcholine molecule required it to have a receptor site at the cell surface? [1mk]

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ii) Use information from the diagram to explain how the Ach receptor acts as a transducer. [1mk]

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b. The types of drug used by anesthetists affect signaling by Ach at the neuromuscular junction.

Vecuronium: Competitively blocks the Ach receptors

Neostigmine: Inhibits a cetylcholinesterase

When vecuronium blocks the binding of Ach to its receptors, muscle contraction stops.

Explain how neostigmine would reverse the effects of vecuronium . [2mks]

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c. Label parts A, B, C [3mks]

A

B

C

d. Define the terms:

i) Action potential [1mk]

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ii) Resting potential [1mk]

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43. a) Give an account of energy in ecosystems under the following headings:

i) Energy fixation [3mks]

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ii) Flow of energy through trophic levels. [3mks]

[3mks]

b) Give an account of the pollution of fresh water ecosystems arising from the

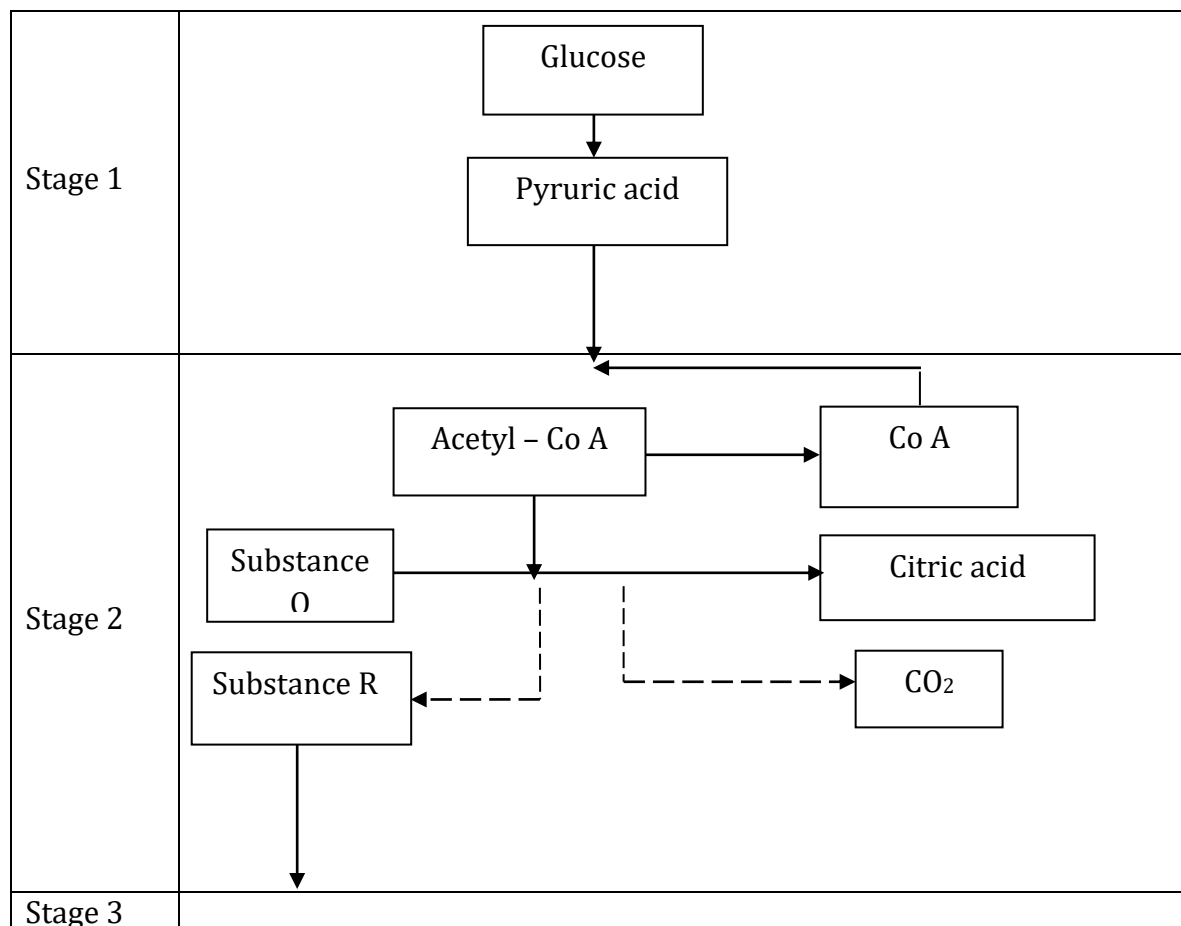
i) Use of fossil fuels [2mks]

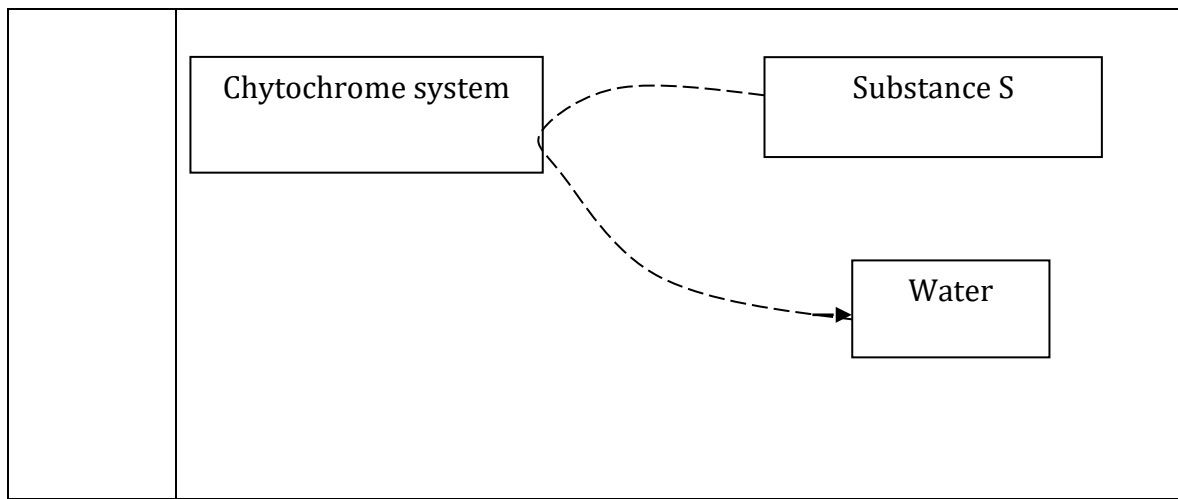
[2mks]

ii) Release of very hot water into lake from nuclear plants. [2mks]

[2mks]

44. The diagram below shows an outline of three stages of aerobic respiration in muscle.





- a. Name stage 1 [1mk]

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- b. Complete the table to show the number of carbon atoms in one molecule of each substance. [3mks]

Substance	Number of carbon atoms in one molecule
Pyruvic acid	
Substance Q	
Citric acid	

- c. Name substance R in stage 2 and the carrier which transfers it to the chytochrome system. [2mks]

Substance R.....
 Carrier

- d. Name substance S in stage 3 and its role in aerobic respiration. [2mks]

i) Substance S

 ii) Role in aerobic respiration

- e. The diagrams below show the structure of a mitochondrion from a skin cell and one from a muscle cell.

Mitochondrion from skin cells

Mitochondrion from muscle cell

Describe the difference in structure between the two mitochondria and explain how this is related to the function of the muscle. [2mks]

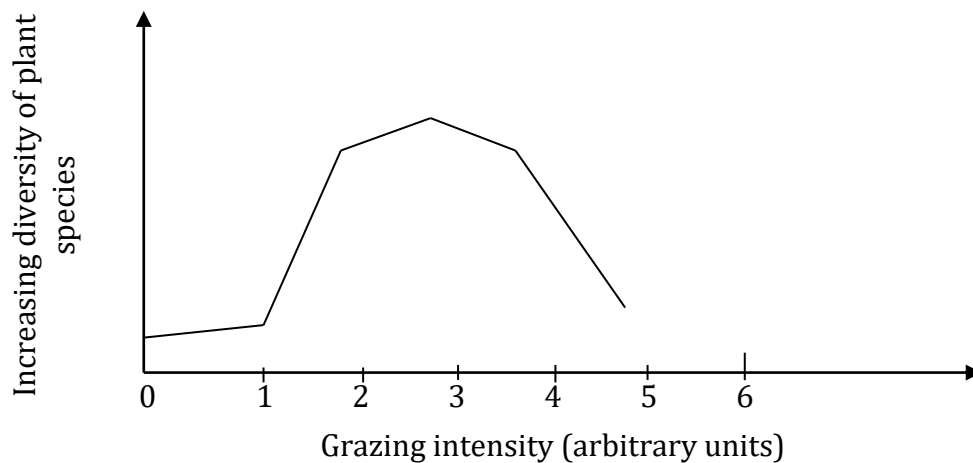
Difference

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Explanation

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45. a) The graph below shows how the intensity of grazing by rabbits affects the diversity of plant species in an area of grass land.



i) Describe the graph [2½mks]

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ii) Explain the change in diversity of plant species shown on the graph between 0 and 3 units [2mks]

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b) i. Give evidence from the graph that indicates that the grassland contained some plant species that are tolerant of grazing.

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ii. Give one adaptation that allows plants to tolerate grazing. [1mk]

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c) Some plants have adaptations that allow them to discourage grazing.

i) Name a structural defense mechanism that allows some species to discourage grazing. [1mk]

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ii. Name a substance produced by the cells of some plant species that discourages grazing. [1mk]

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d) How is the gut of the rabbit adapted to feed on the plants? [1½mks]

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46. a) Give five differences between RNA and DNA [5mks]

	RNA	DNA
i)		
ii)		
iii)		
iv)		
v)		

b) With out using diagrams describe the semi-conservative theory of DNA replication. [4mks]

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c) What are the building blocks of nucleic acids? [1mk]

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S.6 C.R.E P245/1

[OLD TESTAMENT]

TIME: 2½ hours

INSTRUCTIONS

Answer any **four** questions

All questions carry equal marks.

1. Examine the teaching of Genesis 1 – 3 about
 - i) The nature of God [12mks]
 - ii) Nature of man [13mks]
2. a) Examine the impact of Moses' response to God's call on the people of Israel. [13mks]
b) What lessons can church leaders learn from the call of Moses? [12mks]
3. a) Analyze the importance of offerings and sacrifices in the History of Israel. [13mks]
b) Justify the condemnation of the sacrifices offered in Israel by Old Testament prophets.
4. a) Comment on the teachings of blessings and curses on the children of Israel in Deuteronomy 28. [13mks]
b) What should Christians do to get blessings? [12mks]
5. Comment on the failures of King Saul in Israel. [13mks]
b) In what ways should Christian political leaders rule over their people today? [12mks]
6. Assess the greatness of King David in Israel. [25mks]
7. "Solomon was successful due to his father's last instructions" Discuss [15mks]
b) What lessons do modern Christians learn from Solomon's failures? [10mks]
8. ".....people of Israel I am going to send foreign army to occupy your country." Amos 6: 14
 - a. What prompted Amos to utter the above words? [13mks]
 - b. Discuss the causes of disaster in Africa Traditional Society. [12mks]
9. Account for the contest on Mount Carmel. [13mks]
b) What was the significancy of the contest to people of Israel? [12mks]
10. a) Why was there confrontation between Prophet Amos and Chief Priest Amaziah? (Amos 7: 10 – 17) [13mks]
b) Examine areas that might lead to conflicts among religious leaders. [12mks]
11. Examine the ways in which Hosea's marriage and family experience portray the nature of;
 - i) God [13mks]
 - ii) Man [12mks]
12. a) Comment on the view that Psalms 20 is a prayer for victory. [13mks]
b) What lessons can Christians learn from the Psalm? [12mks]

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RESOUREFUL MOCK 2018

S.6 C.R.E P245/2

[NEW TESTAMENT]

TIME: 2½ hours

Instructions

*Attempt any **four** questions*

All questions carry equal marks

Any additional questions will not be marked

1. Examine the role of Baptist and Lord's Supper in development and maintenance of Christian faith during the apostolic age. [25mks]
2. a) Discuss the view that the oral proclamation helped in the first spread of the good news. [13mks]
b) How does the gospel reach the masses today? [12mks]
3. a) Explain the meaning of the conversation between Jesus and the rich young man in Mark 10: 17 – 31. [13mks]
b) What lessons do rich Christians learn from this story? [12mks]
4. a) Account for the main method of preaching and teaching by Jesus in the gospel of Mark. [13mks]
b) Assess the methods of preaching by modern Christians. [12mks]
5. Compare the cleansing of the temple by Jesus in the gospel of Mark and John. [25mks]
6. a) "Jesus appears to reveal his nature more in the gospel of John than Mark." Justify the statement. [12mks]
b) How does John present the messiahship of Jesus? [13mks]
7. a) Analyze the significance of Jesus walking on water in the gospel of John. [13mks]
b) Examine the relevance of the above event to modern Christians. [12mks]
8. a) Account for the crucifixion of Jesus on the cross in the gospel of John. [13mks]
b) How do Christians prepare for life after death today? [12mks]
9. a) Examine the causes of division in the Corinthian church. [12mks]
b) Comment on the dangers of division in the church today. [13mks]
10. To what extent is the theme of freedom the dominant theme in Paul's letter to the Galatians? [25mks]
11. The prayer of a righteous man is powerful and effective,
 - a. What did James intend to teach by uttering the above statement in James 5: 16 [13mks]
 - b. Examine the relevance of his teaching to the modern church. [12mks]
12. a) Examine Peter's teaching about the person and character of Jesus Christ. [13mks]
b) Comment on the eschatological teaching in Peter. [12mks]

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RESOUREFUL MOCK 2018

S.6 PRINCIPLES & PRACTICES

OF AGRICULTURE P515/1

TIME: 2 hours

INSTRUCTIONS TO CANDIDATES

Answer all questions

FOR EXAMINER'S USE ONLY		
Question	Marks	Examiner's No.
Section A		
31		
32		
33		
34		
35		
Total		

SECTION A [30 marks]

Write the letter corresponding to the best answer in the box provided

- The demand for agricultural products is usually described as inelastic because;
A. Their demand does not change
B. They are consumed in high quantities
C. Their demand does not change correspondingly season
D. The demand does not change correspondingly with price
- When a foetus receives antibodies from the mother through the placenta, it acquires;
A. Active immunity
B. Long-term immunity
C. passive immunity
D. artificial immunity
- Mixing of fuel and compressed air occurs in;
A. The carburetor
B. Diesel engine
C. fuel pump
D. petro engine
- In farm accounting; appreciation is
A. A liability
B. an income
C. an inventory
D. an asset
- Which of the following conditions will lead to delayed maturity of cereals
A. Deficiency of nitrogen in soil
B. Deficiency of phosphorus in soil
C. Excessive nitrogen in soil
D. Deficiency of potassium in soil
- A successfully inseminated cow is likely to have a high concentration of;
A. Follicle stimulating hormone
B. Progesterone
C. Luteinising hormone
D. Oxytocin hormone
- Payment for casual labour on the farm is classified as
A. A fixed cost
C. a variable cost

- B. An overhead cost D. an implicit cost

8. During which of the following transfer of energy is most energy lost in an ecosystem?

A. Producers	—————→	primary consumers	☐
B. Primary consumers	—————→	secondary consumers	
C. Secondary consumers	—————→	tertiary consumers	
D. Tertiary consumers	—————→	Decomposers	

9. Which of the following is a ‘notifiable disease’? ☐

A. Scours	C. Foot and mouth
B. Coccidiosis	D. East coast fever

10. One of the following influences the effectiveness of a non-selective contact herbicide. ☐

A. Degree of wetting of leaves	C. Stage of growth of weeds
B. Type of weed under control	D. time of application

11. Which one of the following sets of tools is used for the same purpose? ☐

A. Caustic stick, wire saw, pincers	C. hot iron, wire saw, pincers
B. Hot iron, caustic stick, pincers	D. hot iron, caustic stick, wire saw

12. All the following are vector borne diseases except; ☐

A. Ground nut rosette disease	C. Maize streak
B. Coffee anthracnose	D. Cassava mosaic

13. Which of the following types of soil water is most useful to crops? ☐

A. Gravitational water	C. Field capacity water
B. Capillary water	D. Hygroscopic water

14. Which of the following actuates the motion of push rods in the valve system? ☐

A. Cam shaft	B. timing gears	C. Rocker arm	D. crankshaft
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15. Good quality concrete can be obtained in construction activities by ☐

A. Mixing it on a cool day
B. Using high concentration of cement
C. Using it immediately after mixing
D. Mixing its ingredients in the right proportions

16. Which of the following qualities of a cover crop is vital in soil and water conservation? ☐

A. Tolerance to drought	C. highly leafy and spreading
B. Tolerance to pests and diseases	D. Leguminous in nature

17. One of the following factors determines the planting depth of a seed? ☐

A. Type of soil	C. Soil fertility
B. Type of crop	D. Seed size

18. In which one of the following parts of a chloroplast are splitting enzymes mostly located? ☐

A. Stoma	B. Intergrana	C. Cytoplasm	D. Grana
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19. Excessive use of pesticides in the long term affect mostly? ☐

A. Carnivores	B. Parasites	C. Herbivores	D. Producers
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20. Magnesium deficiency in cattle is shown by the following conditions?

b) Briefly explain how the following methods help to remove excess water from crop land. [5mks]

i) Use organic matter

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ii) Sub-soiling

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iii) Planting deep rooted plants

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iv) Use of rubbles

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v) Use of ridges

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32. a) One of the problems farmers find today is the fluctuation of prices for most agricultural produce mainly due to their nature. In view of this, give the causes of this phenomenon. [15mks]

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b) Suggest recommendations to keep the supply of agricultural commodities stable in the markets [5mks]

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33. a) Give the major causes of calf mortality on farms? [5mks]

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b) Suggest the precautions necessary while bucket feeding a calf. [5mks]

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34. a) Explain the factors that may reduce the effectiveness of dipping cattle on the farm. [5mks]

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b) What are the advantages of using cattle dip in tick control? [5mks]

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35. An experiment was carried out to investigate the rate of photosynthesis in maize plant (a C₄ plant) and a bean plant (a C₃ plant). The rate of photosynthesis of the two crops was determined at different concentrations of CO₂, by measuring the rate of evolution of O₂ from the crops.

The temperature and light intensity were maintained constant.

CO ₂ concentration (%)	Rate of photosynthesis per leaf area per sec. (O ₂ evolved in cm ³)	
	Maize	Bean
0.01	17.0	0.0
0.02	38.0	0.0

0.03	55.0	01.5
0.04	57.0	23.0
0.06	57.0	56.5
0.06	57.0	65.0

a. Compare the variation in ratio of photosynthesis of the two crops at the following CO₂ concentrations. [2mks]

i) 0.01 – 0.02

.....
.....

ii) 0.04 – 0.08

.....
.....

b. Give a possible explanation for the answer in (a) above. [2mks]

.....
.....
.....

c. Why were temperature and light intensity kept constant in the experiment above? [1mk]

.....
.....

d. What general conclusion can you draw about the photosynthetic rates of the two crops basing on the results in the table? [2mks]

.....
.....
.....
.....

e. Measuring the rate of photosynthesis by determining the rate of evolution of O₂ may be inaccurate method, and may give misleading results. Give a reason. [1mk]

.....
.....
.....

f. Give two differences between C₃ and C₄ plants [2mks]

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.....
.....

END

RESOUREFUL MOCK 2018

S.4 GEOGRAPHY 273/1

TIME: 2½ hours

INSTRUCTIONS

Section A part I and II are compulsory and attempt **one** question from section B

SECTION A

PART I

1. The process by which a river uses its load to erode its bed and banks is called
A. Abrasion B. solution C. solution D. Attrition
2. Which one of the following rocks is most resistant to weathering?
A. Marble B. Pumice C. granite D. Quartzite
3. Vertical erosion is dominant in the upper stage of river along profile mainly due to;
A. Steep gradient C. large volume of water
B. Narrow channels D. high velocity of water
4. The lines drawn on maps joining places of the same cloud cover are called
A. Isohyets B. Isohels C. Isonephhs D. Isotherms
5. Which one of the following is the main effect of high population growth rate on the environment?
A. Soil erosion C. land fragmentation
B. Swamp reclamation D. destruction of vegetation
6. The process by which rock fragments are removed from the earth's surface and transported to another area is called;
A. Denudation B. Weathering C. mass wasting D. Glaciation
7. The persistent floods in Kampala city have been mainly brought by;
A. Excessive rainfall C. blockage of water channels
B. Destruction of vegetation D. poor town planning
8. Which one of the following features is found in the middle stage of rivers along profile?
A. Levees C. Ox bow lakes
B. Deltas D. Interlocking spurs
9. The way in which mineral particles are packed together in the soil is called;
A. Structure B. texture C. catena D. profile
10. Which one of the following fish preservation methods pollutes the environment
A. Sun drying B. Freezing C. Smoking D. Salting
11. Which of the following coastal land forms in East Africa were formed by wave erosion
A. Breaches and Spits C. Cuspate and Tombolos
B. Caves and blow D. Beaches and Cliff
12. Which of the following is a sedimentary rock?
A. Granite B. Sandstone C. Marble D. Basalt

13. Which one of the following cattle diseases is spread by tsetse flies?
A. Rinderpest B. East coast fever C. Anthrax D. Nagana
14. Tarns on the glaciated mountains of East Africa have been used mainly for;
A. Tourism B. Fishing C. research D. water supply
15. The type of forests found at the coast of East Africa is known as;
A. Bamboo B. Temperate C. Mangrove D. Montane
16. Which of the following lakes in East Africa is found in the rift valley?
A. Kyoga B. Wamala C. Rukwa D. Bisina
17. The low rate of chemical weathering in North Eastern Uganda is due to;
A. Dry climatic conditions C. resistant rocks
B. Flat topography D. Limited human activities
18. The major factor limiting local tourism in East Africa is
A. Low income levels C. shortage of accommodation
B. Inadequate information D. political instability
19. Which of the following human activities has mainly led to environmental degradation in North Eastern Uganda?
A. Building settlement C. Animal rearing
B. Uncontrolled hunting D. Bush burning
20. Which of the following districts in Uganda has the highest population density?
A. Mbale B. Gulu C. Masindi D. Iganga
21. Atmospheric pressure at a weather station is measured in units called;
A. Millibars B. percentages C. Millimeters D. Degrees
22. Which one of the following volcanoes is found outside the rift valley in East Africa?
A. Meru B. Longnot C. Elgon D. Mugavura
23. The reduction of infant mortality rate in East Africa is mainly due to improved
A. Medical services C. Income levels
B. Child nutrition D. Family life education
24. Which of the following industries in East Africa use water as a raw material?
A. Textile mills B. Breweries C. Sisal factory D. Leather
25. The major economic activity which has led to the destruction of wetlands in East Africa is;
A. Brick making C. animal rearing
B. Fishing D. Tourism
26. Limestone rocks are weathered by the process of
A. Hydration B. Oxidation C. animal rearing D. Tourism
27. Limestone rocks are weathered by the process of
A. Hydration B. Oxidation C. Carbonation D. hydrolysis
28. The Mobuku river in Kasese is important for
A. Irrigation B. Fishing C. navigation D. Tourism
29. Which of the following crops is grown on Zanzibar Island?
A. Cloves B. Pyrethrum C. sugar canes D. cotton
30. Landslides on Mt. Elgon can be reduced through the practice of

- A. Reforestation B. afforestation C. crop-rotation D. Terracing

PART II

MAP WORK, PHOTOGRAPH INTERPRETATION, FIELDWORK AND EAST AFRICA

Answer **four** questions from part **II**, including questions 1, 2 and 3 which are compulsory

SECTION A

1. COMPULSORY QUESTION: MAP WORK [20 marks]

Answer **all** parts of this question

Study the 1: 50,000 **UGANDA: LAKE NAKIVALI** map extract, part of sheet 86/4 Series Y732, Edition 4-U.S.D and answer the questions that follow:

- a. i) State the grid reference of the borehole north of Nyaminyongo. [1mk]
ii) Identify the man-made feature found at grid reference 611166. [1mk]
- b. Measure and state the distance (in kilometers) of dry weather road from Musirira road junction (grid reference 610082) to Ijumuriro road junction (grid reference 736109) [2mks]
- c. Draw a cross-section along Northing 02 between references 600020 and 670020 and on it, mark and name;
 - i) Gentle slope,
 - ii) Any two rivers,
 - iii) Dry weather road,
 - iv) Broad valley,
 - v) Settlements [8mks]
- d. Describe the relationship between relief and communication in the area shown on the map. [8mks]

2. COMPULSORY PHOTOGRAPH INTERPRETATION QUESTION [15 marks]

3. COMPULSORY FIELDWORK QUESTION [15 marks]

Answer **all** parts of this question

For any one field work study you have conducted:

- a. i) State the topic of the study [1mk]
ii) Outline the objectives of the study. [2mks]
- b. Describe how any two of the following methods were used to collect information from the field during the study.
 - i) Observation [2mks]
 - ii) Recording [2mks]
 - iii) Measurement [2mks]
- c. Outline the disadvantages of using the methods chosen in (b) above. [3mks]
- d. What follow-up activities did you carry out after the fieldwork study? [3mks]

SECTION B: EAST AFRICA [20 marks]

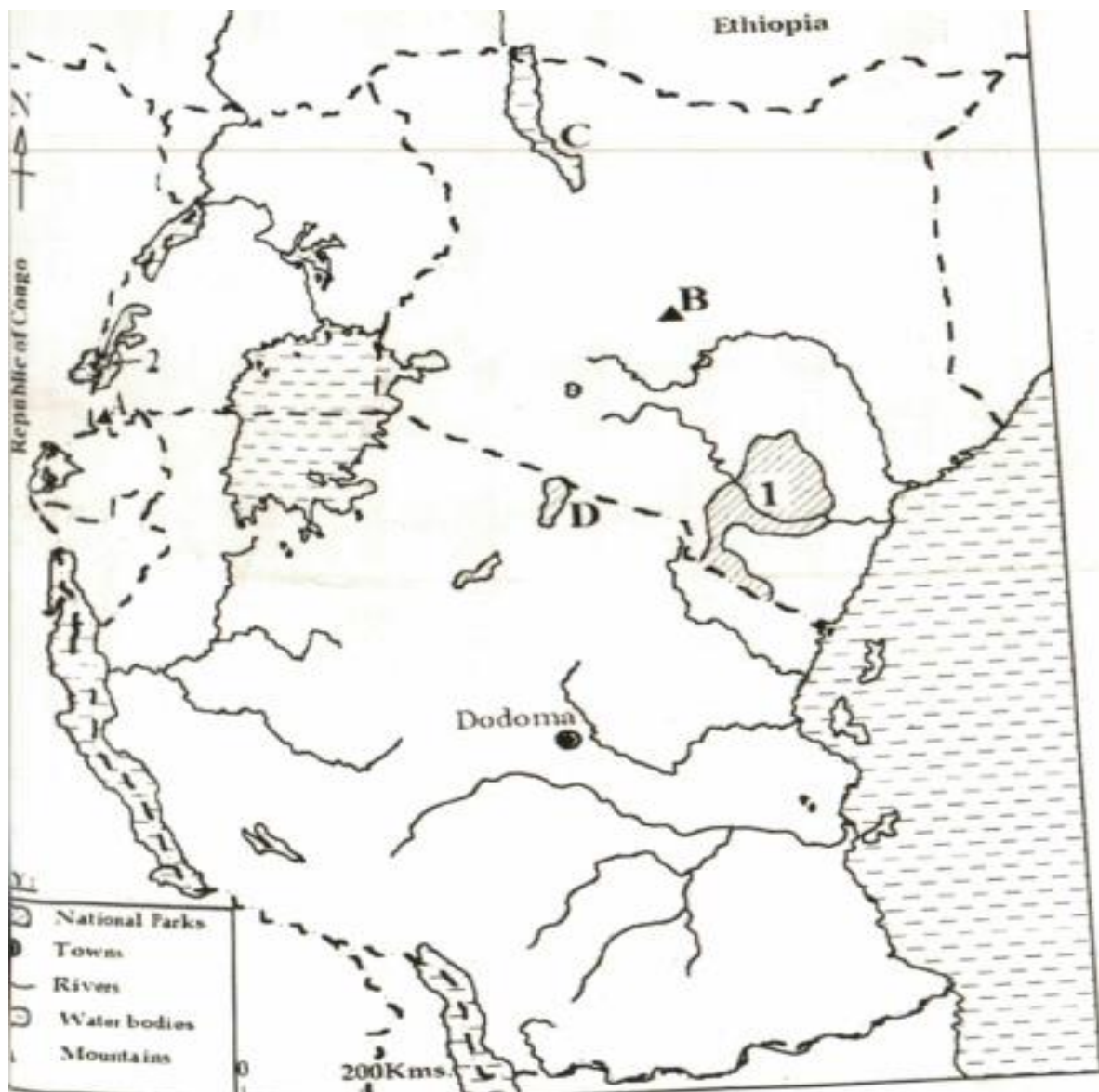
Answer only **one** question in this section

4. Study the table below showing the population of three East African countries and answer the questions that follow.

Country	Land area ('000km ²)	Total population in millions (2012)	Urban population as a percentage of total population (2012)
Uganda	241.6	36.3	16
Kenya	580.4	43.2	24
Tanzania	947.3	47.8	27

Adapted from: *World Development indicators, 2014. The World Bank, Washington D.C. Pp 14 and 16*

- a. Calculate the;
- i) Number of people living in urban centres for each country. [2mks]
 - ii) Total population living in urban areas in East Africa. [2mks]
- b. Draw a pie-chart to show the proportion of the urban population for the three East African countries. [4mks]
- c. i) Name any one urban centre in each of the three East African countries. [3mks]
- ii) Explain the causes of urbanization in East Africa. [6mks]
- d. Outline the problems faced by people living in the urban areas of East Africa. [3mks]
5. a) Differentiate between weather and climate. [4mks]
- b) Describe how rainfall is measured at a weather station. [6mks]
- c) Explain the factors which influence rainfall distribution in East Africa. [6mks]
- d) Outline the problems faced by people living in areas that receive low rainfall in East Africa. [4mks]
6. a) Draw a sketch map of East Africa and on it, mark and name:
- i) Tropical rain forests
 - ii) Miombo woodlands
 - iii) Semi-desert vegetation
 - iv) The Indian ocean
 - v) The Equator [6mks]
- b) Describe the characteristics of tropical rain forests. [6mks]
- c) Explain the conditions which have influenced the distribution of tropical rain forests in East Africa. [6mks]
- d) Outline the benefits of tropical rain forests in East Africa. [2mks]
7. Study the map of East Africa provided below and answer the questions that follow.



- a. Name the:
 - i) Mountains marked A and B
 - ii) Lakes marked C and D
 - iii) National parks marked 1 and 2 [6mks]
- b. Mention any two:
 - i) Tourist attractions found in East Africa [2mks]
 - ii) Countries where tourists come from [2mks]
- c. Explain the benefits of the tourist industry to the people of East Africa. [6mks]
- d. Outline the problems faced by the tourist industry in East Africa. [4mks]

END

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RESOUREFUL MOCK 2018

S.4 COMMERCE 800/1

TIME: 2½ hours

INSTRUCTIONS

Answer **all** questions in section **A** and any **four** questions in section **B**

All questions carry equal marks.

Indicate questions answered.

NameIndex No.....Stream.....

QUESTIONS	Section A					TOTAL
MARKS						

SECTION A [20 marks]

1. A bill of lading is.....
 - A. A document drawn up by a shipping company indicating charges for shipping
 - B. A demand for payment for goods in internal trade
 - C. An indent
 - D. A document signed by the captain of a ship by which he makes himself responsible for safe delivery.
2.stipulates the powers and limitations of a company which governs its relationship with the outside world.
 - A. Certificate of incorporation
 - C. Trading license
 - B. Memorandum of association
 - D. Articles of association
3. The type of sale where a leading giant firm sets price and other firms follow is called
 - A. Price leadership
 - C. Haggling
 - B. Auctioning
 - D. Re-sale price maintenance
4. Ms. J. Nalutaaya had the following business records;

Opening stock	shs 7.000.000
Closing stock	shs 5.000.000
Cost of sales	shs 8.500.000

Calculate the rate the turnover.
 - A. 2.26 time
 - B. 1.4 times
 - C. 22.6 times
 - D. 3.6 times
5.is the rate at which a country's exports exchange against its imports.
 - A. Terms of payment
 - C. balance of payments
 - B. Terms of trade
 - D. balance of trade
6. Why do retailers need large stock?
 - A. To get big space
 - B. Because goods held may go out of fashion
 - C. Because they sell a variety of goods
 - D. To be recognized

7. Musajjawaza traders Ltd bought 50 bags of sugar at shs 80,000 each. They were offered 10% trade discount and 5% cash discount. How much did they pay for the goods?
 A. Shs. 3.600.000 B. shs 3.620.000 C. shs 4.000.000 D. shs 4.400.000
8. Which of the following is not a means by which the central bank controls credit?
 A. Increasing or decreasing the cash ratio
 B. Selective credit control
 C. Calling for special deposits
 D. Accepting deposits from people
9. A cheque is drawn in favour of Namboozie Betty. How is Namboozie Betty called?
 A. Endorsee B. Drawee C. Payee D. drawer
10. If working capital is insufficient
 A. The workers are not used in the best way.
 B. There is too much cash on the bank account
 C. There is no enough money to meet daily expenses
 D. The machines in the office have depreciated
11. A document issued by the seller to the buyer indicating terms and conditions under which goods have been supplied is called
 A. Catalogue C. Invoice
 B. Credit status inquiry D. A proforma invoice
12. If a trader makes a profit of shs 4.000.000 by selling 50 chairs at shs 20.000 each. What was the cost price of each chair?
 A. Shs 13,333/= C. shs 14,000/=
 B. Shs 10.000/= D. shs 12.000/=
13. Which of the following goods is most likely to be sold by differed payment rather than hire-purchase?
 A. Motor cycle C. Wedding dress
 B. Television D. Washing machine
14.is a financial involvement capable of being insured?
 A. Insurable interest C. Contribution
 B. Indemnity D. Premium
15. The account in a bank which earns the highest interest rates on deposit is.....
 A. Savings account C. joint account
 B. Fixed deposit account D. current account
16. A client in the stock exchange does not need the service of.....
 A. An insurer B. a bull C. a bear D. jobber
17. Which of the following would be most suitable to advertise a cheap commodity, which is for general consumption in Uganda?
 A. Posters B. Radio C. television D. newspapers
18. The government may set up a business enterprise to:
 A. Sell shares to members of the public
 B. Earn more profits
 C. Provide essential services

- D. Enlighten the public on how to conduct business
19. Capital owned is given by a formula
- A. Total fixed assets + working capital
 - B. Current assets + current liabilities
 - C. Fixed assets + current assets
 - D. Total assets – total liabilities
20. A current transaction is one where payment
- A. For goods and service is done a later date
 - B. Is done before goods are delivered
 - C. Is higher than the value of goods and services purchased
 - D. Transfer of goods takes place at the same time

SECTION B [80 marks]

21. a) Differentiate between branding and blending. [4mks]
 b) What are the advantages and disadvantages of branded goods? [16mks]
22. a) Out line any six factors that limit international trade. [6mks]
 b) What measures can customs authorities employ to control the flow of imports? [12mks]
23. a) Describe the organization of a ware house. [6mks]
 b) Why is a bonded ware house important in the modern commerce? [14mks]
24. a) Mention four risks an owner of a factory is likely to insure against. [4mks]
 b) What is the importance/significance of insurance to a manufacturer? [6mks]
 c) Explain five reasons why insurance activities are not well spread in your country. [10mks]
25. a) Define consumer's protection. [2mks]
 b) Why is there a need of the government to protect consumers? [10mks]
 c) Explain four methods used by the government to protect consumers. [8mks]
26. a) What are the functions of Bank of Uganda? [10mks]
 b) Explain any five methods used by Bank of Uganda to control commercial banks. [10mks]
27. a) Define the term "Partnership deed." [2mks]
 b) List any six contents of a partnership deed. [6mks]
 c) What are the advantages of partnership over sole proprietorship? [12mks]
28. a) Distinguish between mark up and gross margin. [4mks]
 b) The following were records of LUDIGIDO's business at the end of the trading period of 2016
- | | |
|----------------------------------|---------------|
| Stock on 1 st January | shs 344,300 |
| Stock on 31 Dec | shs 267,200 |
| Purchases | shs 2,262,900 |

Mark up	40%
Expenses	shs 458,000
Return outwards	shs 140,000

Calculate;

- | | | |
|------|-------------------|--------|
| i) | Cost of sales | [4mks] |
| ii) | Average stock | [3mks] |
| iii) | Rate of turn over | [3mks] |
| iv) | Gross profit | [3mks] |
| v) | Net profit | [3mks] |

~~DO YOUR UTMOST~~

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RESOUREFUL MOCK 2018

S.6 GEOGRAPHY P250/1

(Physical Geography)

TIME: 3 hours

INSTRUCTIONS TO CANDIDATES

This paper consists of three sections A, B and C

*Answer **four** questions*

Section A is compulsory

*Answer **one** question from section B and **one** question from section C*

Credit will be given for the use of relevant sketch maps, diagrams and specific examples studied in the field.

Any additional question(s) answered will not be marked.

SECTION A

Questions 1 and 2 are compulsory

1. Study the map extract EAST AFRICA 1: 50,000 (UGANDA) KIJURA series Y732, sheet 56/2, Edition 3, U.S.D and answer the questions that follow:
 - a.
 - i) State the grid reference of the dispensary at Rukinga. [1mk]
 - ii) Identify the feature found at grid reference 118008. [1mk]
 - b. Giving evidence from the map extract;
 - i) Describe the location of Kijura [2mks]
 - ii) State the heights of Kiduru hilltop [2mks]
 - c. With the help of a tracing paper, draw a sketch map of the area on Kijura map extract between Easting's 10 and 16; and Northing's 84 and 91.
On it, mark and label
 - i) Transport routes
 - ii) Itwara Forest Reserve
 - iii) River Nyakabale
 - iv) Any two relief region [10mks]
 - d. Describe the;
 - i) Physical landscape of the area [3mks]
 - ii) Problems faced by the people living in the area [6mks]

2. COMPULSORY PHOTOGRAPHIC INTERPRETATION – QUESTION

Study the photograph provided below and answer the questions that follow;



- a. Draw a landscape sketch of the area shown on the photograph and on it, mark and label
 - i) Two physiographic regions
 - ii) Vegetation types,
 - iii) Land use patterns [8mks]
- b. i) Identify the type of occurrence shown on the photograph. [1mk]
 ii) Examine the causes of the occurrence identified in (b i) above. [7mks]
- c. What are the effects of the occurrence identified in (b i) above? [6mks]
- d. Giving reasons for your answer, suggest an area in East Africa where this photograph could have been taken. [3mks]

SECTION B

Answer **one** question from this section

3. a) Distinguish between fault-guided valleys and grabens. [6mks]
 b) Account for the formation of grabens in East Africa. [19mks]
4. Examine the processes responsible for the formation of sedimentary rocks in East Africa. [25mks]
5. Account for the formation of rock stumps in East Africa.

SECTION C

Answer **one** question from this section

6. a) Distinguish between frontal/cyclonic Rainfall and Orographic Rainfall. [15mks]
b) Describe the conditions leading to the formation of convectional rainfall in East Africa. [10mks]
7. a) Describe the characteristics of the semi-arid type of vegetation in East Africa. [10mks]
b) Account for the existence of the semi-arid type of vegetation in East Africa. [15mks]
8. To what extent are human factors responsible for the occurrence of soil erosion in East Africa? [25mks]

END

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RESOUREFUL MOCK 2018

S.4 PHYSICS 535/1

TIME: 2¼ hours

INSTRUCTIONS

Sections A contains 40 objective type questions.

You are required to write the correct answer A B C or D against each question in the box on the right hand side.

Section B contains 10 structured questions.

Answers are to be written in the spaces provided on the question paper.

Acceleration due to gravity $g = 10\text{m/s}^2$

Specific heat capacity of water = $4200\text{J Kg}^{-1} \text{K}^{-1}$

Density of water = 1000Kg m^{-3}

Speed of sound in air = 330m/s

SECTION A

1. The temperature of steam above boiling water at normal atmospheric pressure is the
A. Upper fixed point C. Fundamental interval
B. Lower fixed point D. absolute temperature
2. When the time base of a C.R.O is on and no signal is connected on both the Y and X plates, the screen has a
A. Bright spot at the centre C. bright vertical line
B. Bright horizontal line D. bright sine wave
3. A white dress viewed through a green glass will look green because the
A. Glass absorbs all colours except green
B. Green colour is absorbed by the glass
C. Green colour is reflected onto the glass
D. Glass adds green light to the light coming from the dress
4. Which of the following properties of cathode rays show that they carry charge?
i) They move in a straight line
ii) They are deflected in a magnetic field
iii) They produce heat in X-ray tubes
A. i) only B. ii) only C. iii) only D. ii) and iii) only
5. Which of the following statements is true about concrete?
A. It is both brittle and ductile
B. It is a ductile material
C. Concrete is weak in tension and strong in compression
D. Concrete is strong in tension and weak in compression
6. The formation of the eclipse of the sun can be explained by the fact that light
A. Can be reflected C. can travel through a vacuum
B. Travels in a straight line D. travels faster in a vacuum
7. A property which distinguishes longitudinal waves from transverse waves is the

- A. Wave length C. need for material medium ☐
- B. Velocity D. relative directions of oscillation and propagation
8. The image in a plane mirror is
- A. Upright, virtual with magnification of 1
- B. Upright, real with magnification of 1 ☐
- C. Inverted, virtual with a magnification of 1
- D. Inverted, real with magnification of 1
9. When the volume of a fixed mass of a gas is reduced at constant pressure, the temperature of the gas will ☐
- A. Decrease B. increase C. be constant D. reduce to zero
10. Which of the following quantities share the same unit?
- i) Resistance
- ii) Potential difference
- iii) Current
- iv) Electromotive force ☐
- A. i) and ii) only C. iii) and iv) only
- B. ii) and iv) only D. ii) and iii) only
11. to increase the temperature of a substance by one Kelvin, it requires an amount of heat known as ☐
- A. Latent heat C. heat capacity
- B. Absolute zero D. specific heat capacity
12. The work done to move a unit charge in a closed circuit is the ☐
- C. Electromotive force C. potential difference
- D. Current D. Resistance
13. A force of one newton is applied to an object and the object moves a distance of one metre in the direction of the force. The work done by the force is the ☐
- A. Newton B. Joule C. Watt D. Volt
14. The rate of change of linear momentum of a body is equal to ☐
- A. Impulse B. Force C. Inertia D. Velocity
15. Two resistors A and B are connected in series. The current flowing ☐
- A. In A is more than current in B
- B. In A is the same as that flowing in B
- C. In A is less than that flowing in B
- D. Is divided into two
16. The rate of evaporation from a body is increased by ☐
- i) Increase in temperature
- ii) Decrease in pressure
- iii) Liquid with greater cohesive forces
- A. i) and ii) only C. i) and iv) only
- B. ii) and iii) only D. iii) only
17. To test whether a piece of a metal is a magnet one would see if it ☐
- A. Attracted steel and iron filings C. repelled a known magnet
- B. Attracted a magnet D. repelled a metal magnet

18. The formation of the eclipse of the sun can be explained by the fact that light

- A. Can be reflected
B. Travels in a straight line
C. can travel through a vacuum
D. travels faster in a vacuum

☐

19. Which of the following is/are correct about the properties of charge?

- i) Like charges repel and unlike charges attract
ii) Electric field lines moving from same charges cross each other
iii) Electric field lines always move from positive charge to negative charge

- A. i) only
B. ii) only
C. i) and iii) only
D. i) and ii) only

☐

20. Anything which changes a body's state of rest at uniform motion in a straight line is

- A. Newton metre
B. Joule
C. Force
D. Momentum

☐

21. T is a mode of heat transfer in vacuum, and S is a mode of transfer in glass but not vacuum. Identify T and S

T

S

- A. Conduction
B. Radiation
C. Convection
D. Radiation
- Convection
Conduction
Radiation
Convection

☐

22. In an electrical appliance, a fuse is connected to the live wire in order to

- A. Increase the current entering an appliance
B. Protect the appliance in case of too much current entering it
C. Protect the person using the appliance from getting an electric shock
D. Quicken the conversion of electrical energy to heat energy by an appliance

☐

23. A pin floating on the water surface sinks when the water is heated because

- A. The pin becomes hot
B. The water boils
C. The water evaporates
D. The surface tension of water is reduced

☐

24. The base of a water reservoir is made wide to

- A. To accommodate the pressure which is transmitted equally in all directions
B. To accommodate the large pressure which increases with depth
C. Increase the atmospheric pressure at the surface
D. To reduce on the weight of the water

☐

25. Two lamps each rated 240V, 25W are used for 6 hours a day. If the cost of electricity is 600/= per unit. What is the total cost of using the lamps per day

- A. $\frac{25 \times 6 \times 600}{2}$
B. $\frac{25 \times 6 \times 600 \times 2}{1000}$
C. $\frac{25 \times 1000 \times 2}{6 \times 600}$
D. $\frac{25 \times 6 \times 600}{2 \times 100}$

☐

26. A body weighs 25N when wholly immersed in water, it weighs 10N. What is the relative density of the body

- A. 2.5
B. 1.67
C. 2.67
D. 0.67

☐

27. The time that elapses between the lighting flash and thunder is 5 seconds. Find the distance of the cloud from the observer (speed of sound in air is 330m/s)

☐

- A. 66m B. 132m C. 1650m D. 3300m

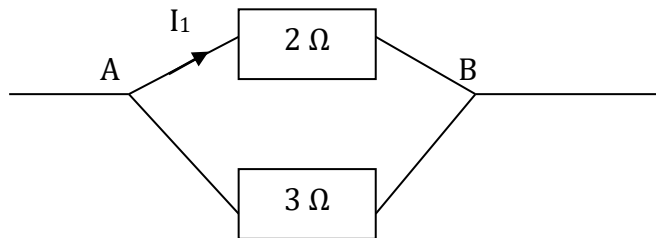
28. A transformer has 1000 turns in the primary coil and 5000 in the secondary coil. If an a.c voltage of 120V is applied to the primary, calculate the voltage across the secondary coils.

- A. $\left(\frac{1000 \times 20}{5000}\right) V$ C. $\left(\frac{5000 \times 120}{1000}\right) V$
 B. $\left(\frac{5000 \times 100}{120}\right) V$ D. $\left(\frac{1000}{5000 \times 120}\right)$

29. Convert 72km/hr to m/s

- A. 72m/s B. 7200m/s C. 20m/s D. 10m/s

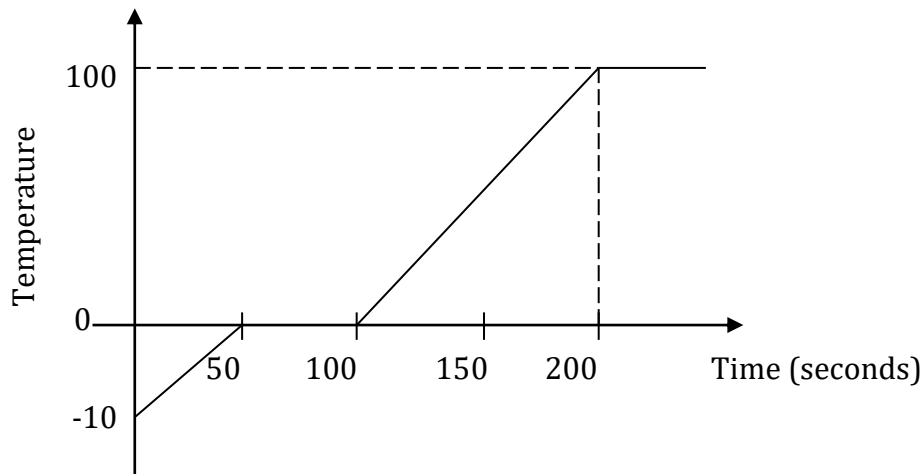
30.



In the fig above if the current I_1 through the 2Ω resistor is 7.5A, the current through the 3Ω resistor is

- A. $\left(\frac{2 \times 7.5}{3}\right) A$ B. $\left(\frac{3 \times 7.5}{2}\right) A$ C. $\left(\frac{3}{2 \times 7.5}\right) A$ D. $\left(\frac{3 \times 2}{7.5}\right) A$

31.



A heater rated 1000W is used to heat 500g of a liquid. The temperature time graph of the liquid is represented above, what is the specific heat capacity of the liquid?

- A. 4200 J Kg⁻¹ K⁻¹ C. 20,000J Kg⁻¹ K⁻¹
 B. 2000 J Kg⁻¹ K⁻¹ D. 5000 J Kg⁻¹ K⁻¹

32. A rubber bullet of mass 100g is fired from a gun of mass 5kg at a speed of 200m/s. Find the recoil velocity of the rifle

- A. 0.01 B. 0.25 C. 4.0 D. 400

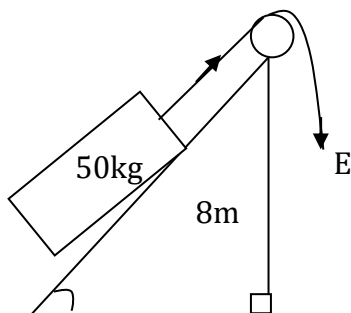
33. 200cm³ of alcohol of density 0.8g cm⁻³ is mixed with 500g of water. What is the mass of the mixture

- A. 600g B. 660g C. 700g D. 750g

34. 87.5% of a radioactive material decays after 60 years. What is its half life?

- A. 10 years B. 15 years C. 20 years D. 30 years

35.



The fig above shows a load of 50kg being raised upwards by an effort E.

If the height of the plane is 8m and inclined at 30° to the horizontal, find the efficiency of the plane if E is 400N

- A. 80% B. 60% C. 62.5% D. 50%

36. A power of 0.5W is developed when a body of mass 200g is raised to the top of a wall in 20 seconds. Find the height of the wall

- A. 5.0×10^{-3} m B. 5.0×10^{-2} m C. 5.0×10^{-1} m D. 5.0×10^0 m

37. The focal length of a convex lens is 15cm, the power of the lens is

- A. 0.06D B. 6.67D C. 7.66D D. 6.0D

38. Two perpendicular forces of 5N and 12N act on an object of mass 2kg. What is the acceleration of the object?

- A. 10m/s^2 B. 6.5m/s^2 C. 17m/s^2 D. 24m/s

39. A current of 5A flows through a given point in a circuit for 4 minutes. Calculate the quantity of charge that passes the point

- A. 5 C B. 20C C. 600C D. 1200C

40. The frequency of a radio wave is 6.6×10^5 Hz. Find the wave length (velocity of light is 3.0×10^8 m/s)

- A. 2.20×10^3 m B. 4.55×10^2 m C. 3.60×10^3 m D. 1.98×10^{14} m

SECTION B

41. a) What is force?

[1mk]

.....

.....

.....

b) A vertical spring of length 30cm is stretched to 36cm when an object of mass 100g is placed in a pan attached to it. The spring is stretched to 40cm when a mass of 200g is placed in the pan. Find the mass of the pan. [3mks]

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42. a) i. Define interference of waves.

[1mk]

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ii. Draw a diagram to show the effect of a narrow gap in the path of plane waves. [1mk]

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b) A radio wave has a wave length of 300m. Calculate the frequency of the radio wave (speed of light = 3.0×10^8 m/s)

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43. A block and tackle pulley system is used to raise a load of 400N steadily through a height of 15m. If the work done against friction is 800J, calculate

a. Work input [2mks]

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.....

.....

b. Efficiency of the system [2mks]

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44. a) The critical angle of glass is 42° . What is meant by the above statement? [1mk]

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b) A ray of light is incident at 30° from air to medium X. If the angle of refraction is 25° . Find the critical angle of medium X. [3mks]

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45. a) Differentiate between conduction and convection. [2mks]

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b) Briefly explain why iron sheets make a cracking noise during a hot day. [2mks]

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46. a) State one application of Archimede's principle. [1mk]

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b) A piece of Iron weighs 175g in air and 153g in water. Find the density of the iron. [3mks]

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47. a) i. Define the term resistance. [1mk]

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.....
ii. State two factors which affect the resistance of a conductor. [1mks]

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b) Two resistors of 3Ω and 4Ω are arranged to a battery. Calculate the minimum resistance that can be obtained from the two resistors. [2mks]

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48. a) What is meant by mass number? [1mk]

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b) Name any two radiations emitted by radioactive substances. [1mk]

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.....
c) State two differences between X -rays and gamma rays. [2mks]

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49. a) Distinguish between potential energy and kinetic energy. [2mks]

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b) A block of mass 2kg falls freely from rest through a height of 3m. Find the kinetic energy of the block just before it hits the ground. [2mks]

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.....
50. a) Define evaporation.

[1mk]

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.....
b) State two factors which affect the rate of evaporation.

[1mk]

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.....
c) Briefly explain using the kinetic theory why evaporation causes cooling.

[2mks]

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END

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RESOUREFUL MOCK 2018

S.6 GEOGRAPHY P250/3

TIME: 3 hours

INSTRUCTIONS

Answer **four (4)** questions in all; **one** question from section **A** and **three** questions from section **B**

Credit will be given for use of relevant sketch maps, diagrams and specific examples studies in the field.

Any additional question(s) attempted will not be marked.

SECTION A: FIELDWORK

1. For any one fieldwork study you have conducted either as a group or an individual;
 - a. State the;
 - i) Topic of the fieldwork study [2mks]
 - ii) Objectives of the fieldwork study [3mks]
 - b. How were the following methods used to collect data during the fieldwork study?
 - i) Observation [3mks]
 - ii) Measurement [3mks]
 - iii) Recording [3mks]
 - c. Outline the problems encountered when using the methods in (b) above. [5mks]
 - d. Explain the relevance of your fieldwork study in the understanding of the geography of the area studied. [6mks]
2. For any one fieldwork study you conducted as an individual or as a group;
 - a.
 - i) State the topic of the study [2mks]
 - ii) Outline the objectives of the study [3mks]
 - b. Draw a sketch map of the area studied and on it mark and name;
 - i) Physical features
 - ii) Land use activities in the area studied [8mks]
 - c. Explain the relationship between physical features and land use activities in the area studied. [6mks]
 - d. What activities did you carry out as a follow –up to the fieldwork? [6mks]

SECTION B: UGANDA

3.
 - a) Describe the process responsible for the formation of mount Rwenzori. [10]
 - b) Assess the impact of mount Rwenzori on human activities in the surrounding areas. [15mks]
4. To what extent has power and energy contributed to the development of industries in Uganda? [25mks]
5.
 - a) Describe the characteristics of tropical rain forests. [10mks]

b) Explain the factors limiting the effective utilization of tropical rain forests in Uganda. [15mks]

6. Study the table below showing annual fish production in Uganda (1976 – 2006) and answer the questions that follow

Year	Fish catch (metric tons)
1976	11,000
1981	17,000
1986	57 000
1991	118,000
1996	106,000
2001	132,000
2006	721,000

- a. Draw a line graph to show the trend in fish production in Uganda. [8mks]
b. Account for the trend in fish production shown in (a) above. [3mks]
c. Assess the contribution of the fishing industry to the development of Uganda. [14mks]

7. Account for the development of the tourist industry in Uganda. [25mks]
8. Assess the role of road transport in the development of Uganda. [25mks]

END

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S.4 PRINCIPLES & PRACTICES

OF AGRICULTURE 527/2

TIME: 2hours

INSTRUCTIONS

Attempt *all*.

Don't attach any extra papers. Write answers in spaces provided only

1. Specimen A, B, C and D are animal feeds

a. Give a situation where each of the specimens may be used for feeding animals.

A

B

C

D

b. Which of the specimens would best meet the nutrient requirements of an animal used alone. Explain your answer

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.....

.....

c. Give effects of feeding specimen D alone to animals.

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2. Specimens G and H are crop plants affected by diseases

a. i) Identify the disease that has affected each crop

G

H

ii) Describe the observable effects of the disease on each crop

G i)

.....

ii)

.....

H i)

.....

ii)

.....

b. Remove one leaf from each crop specimen. Draw and label what is observed in the space provided below

- c. Give 2 non-chemical means of controlling the disease in G
.....
.....

3. Specimens L₁ and L₂ are part of digestive system of farm animals.

- a. Identify the specimens
L₁
L₂
- b. From the structure of the specimens, suggest the type of farm animals they where got from.
L₁
L₂
- c. Examine the contents of each specimen and describe them
L₁
.....
L₂
.....
- d. State 2 structural differences between L₁ and L₂
.....
.....
- e. From the structure of L₁ and L₂ and their contents give the functions of each specimen in the digestive system of the animal it belongs.
L₁
.....
.....
L₂
.....
.....

4. a) i. Identify the specimens M and N

- M
N
ii. State 2 functions of each specimen
M
.....
N
.....

.....
b) How are the structures of the specimens limited for their function?

M
.....
N
.....

c) State the maintenance practices carried on them.

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.....
.....

5. You are provided with specimens P, Q, R and S.

a. Examine the specimens and record the identity and importance of each specimen to animal and crop produced in the table below.

Specimen	Identity	Importance to animal	Importance to crop
P			
Q			
R			
S			

b. Bend until you break the stem of each specimen. Record your observations and from the observations, classify the specimens in the table below.

Specimen	Observation	Classification
P		
Q		
R		
S		

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S.6 LITERATURE IN ENGLISH

P310/1 [PROSE AND POETRY]

TIME: 3 hours

INSTRUCTIONS TO CANDIDATES

All the sections are to be attempted

Candidates are advised to spend 70 minutes (1 hour 10 minutes) section I, and 55 minutes on each of sections II and III

Read section I twice and then answer the questions

There is no need to read the whole paper first

Do the same for section II and then section III

SECTION I

Read the passage below and answer the questions that follow.

I am always amazed when I hear people saying that sport creates good will between the nations.....and that if only the common peoples of the world could meet one another at football or cricket.....they would have no inclination to meet on the battlefield. Even if one didn't know from concrete.....examples (the 1936 Olympic games, for instance) that international sporting contests lead to orgies of hatred, one could deduce it from general principles.

Nearly all the sports practiced nowadays are competitive. You play to win, and the game has little meaning unless you do your utmost to win. On the village green, where you pick up.....and no feeling of local patriotism is involved, it is possible to play simply for the fun and exercise: but as soon as the question of prestige arises, as soon as you feel that you and.....larger unit will be disgraced if you lose, the most savage combative instincts are aroused.who has played even in a school football match knows this. At the international level, sport frankly mimics warfare. But the significant thing is not the behaviour of the players but the attitude of the spectators: and, behind the spectators, of the nations who work themselves into furies over these absurd contests, and seriously –at any rate for short periods–that running, jumping and kicking a ball are tests of national virtue.....

In England, the observation with sport is bad enough, but even fiercer passions are roused in younger countries where game playing and nationalism are both recent developments. In countries like India or Burma, it is necessary at football matches to have strong cordons of police.....to keep the crowd from invading the field. In Burma, I have seen the supporters of one sidethrough the police and disable the goal keeper of the opposing side at a critical moment.

As soon as strong feelings of rivalry are aroused, the notion of playing the game according to rules always vanishes. People want to see one side on top and the other

humiliated, and they forget that victory gained through cheating or the intervention of the crowd is meaningless when the spectators don't intervene physically they try to influence the game by cheering.....own side and "rattling" opposing layers with boos and insults. Serious sport has nothing with fair play. It is bound up with hatred, jealousy, boastfulness, disregard of the rules and sadistic pleasure in witnessing violence: in other words in war minus the shooting.

Instead of blah-blahing about the clean, healthy rivalry of the football field and the great part played by the Olympic games in bringing the nations together, it is more useful to inquire how and why this modern cult of sport arose. Most of the games we now play are of ancient origin, but sport does not seem to have been taken seriously between Roman times and the 19th century Dr Arnold, generally regarded as the founder of the modern public school, looked on games simply as a waste of time. Then chiefly in England and the United States, games were built up into a heavily financed activity, capable of attracting vast crowds and rousing savage passions and the infection spread from country to country. It is the most violently combative sports, football and boxing, that have spread the widest. There cannot be much doubt that the whole thing is bound up with the rise of nationalism –that is with the lunatic modern habit of identify oneself with large power units and seeing everything in terms of competitive prestige.

Also, organized games are more likely to flourish in urban communities where the average human beings lives a sedentary or at least a confined life and does not get much opportunity for creative labour.

In a big town one must indulge in group activities if one wants an outlet for one's physical strength or for one's sadiatic impulses. Games are taken seriously in London and New York, and they were taken seriously in Rome and Byzantium: in the middle ages they were played, and probably played with much physical brutality, but they were not mixed up with politics nor a cause of group hatreds.

If you wanted to add to the vast fund of ill-will existing in the world at this moment you could hardly do it better than by a series of football matches between Jews and Arabs, Germans and Czechs, Indians and British, Russian and Poles, and Italians and Jugoslavs, each match to be watched by a mixed audience of 100,000 spectators. I do not of course suggest that sport is one of the causes of international rivalry; big scale sport is itself, I think, merely another effect of the causes that have produced nationalism. Still, you do make things worse by sending forth a team of eleven men, labeled as national champions, to do battle against some rival team, and allowing it to be felt on all sides that whichever nation is defeated will "lose face".

***George Orwell, "The Sporting Spirit" in
Shooting an Elephant and other Essays.***

Questions

- a. Explain the following words and phrases' in the context of the passage.

- i)local patriotism..... [2mks]
- ii)mimic warfare..... [2mks]
- iii)blah -blahing..... [2mks]
- iv)the infection spread from country to country. [2mks]
- v)sadistic impulses..... [2mks]
- vi)lose face..... [2mks]
- b. What connection does Orwell draw between sport and nationalism? [8mks]
- c. Discuss Orwell's tone throughout the passage. [8mks]
- d. Why do you agree or not agree with Orwell's arguments in the passage? [6mks]

SECTION II

He took the children in the fields to study nature as he put it. He picked flowers and told them the names of various parts, the stigma, pistil, pollen, the petals. He told them a little about fertilization. One child cried out: Look. A flower with petals of blood!

It was a solitary red bean flower in a field dominated by white, blue and violet flowers. No matter how you looked at it, it gave you the impression of the flow of blood. Munira bent over and with a trembling hand plucked it. It had probably been the light playing upon it, for now it was just a red flower.

"There is no colour called blood. What you mean is that it is red. You see? You must learn the names of the seven colours of the rainbow. Flowers are of different kinds, different colours. No I want each of you to pick a flower, count the number of petals and pistils and show me its pollen....."

He stood looking at the flower he had plucked and then threw the lifeless petals away. Yet another boy cried out: "I have found another flower with petals of blood. I mean red. It has no stigma or pistil.....nothing inside." He went to him and the and the others surrounded him.

'No, you are wrong,' he said, this colour is not even red..... It does not have the fullness of colour of the other one. This one is yellowish red. Now you say it was nothing inside. Look at the stem from which you got it. You see anything?

'Yes,' cried the boys. There is a worm –a green worm with several arms or legs.

'Right. This is a worm-eaten flower..... It can not bear fruit. That's why we must always kill worms. A flower can also become this colour if it prevented from reaching the light.'

He was pleased with himself. But then the children started asking awkward questions. Why did things eat each other? Why can't the eaten eat back? Why did God allow this andhappen?

He had never bothered about these kinds of questions and to silence them he told them that is was simply the law of nature. What was law? What was nature? Was he a man? Was he God?

‘Children, he told them, let’s go back a break!’

(Adapted from Petals of Blood by Njugi wa Thiongo)

Questions

- a. What experience is being described in the passage? [4mks]
- b. Describe the feelings of
 - i) The children [4mks]
 - ii) The teacher in the passage [4mks]
- c. What is your attitude towards
 - i) The children [4mks]
 - ii) The teacher [4mks]
- d. Would you call this a successful lesson? Why or why not? [5mks]
- e. Discuss the effectiveness of any four (writing techniques) the author uses in the passage. [8mks]

SECTION III

THE VILLAGE WELL

By this well,
Where fresh waters still quietly whisper
As when I
First accompanied Mother and filled my baby gourd,
By this well,
Where many an evening its clean water cleaned me;

This silent well
Dreaded haunt of the long haired Musambwa,
Who basked
In the midday sun reclining on a rock
Where now I sit
Welling up with many poignant memories;

This spot,
Which has rung with the purity of child laughter;
This spot,
Where eye spoke secretly to responding eye;
This spot,
Where hearts pounded madly in many a breast;

By this well,
Over-hung by leafy branches of sheltering trees.
I first noticed her.
I saw her in the cool of a red, red evening.
I saw her
As if I had not seen her a thousand times before.

By this well
My eyes asked for love, and my heart went mad.
I stuttered.
And murmured my first words of love.
And cupped,
With my hands, the intoxication that were her breasts.

In this well,
In the clear waters of this whispering well,
The silent moon
Witnessed with a smile our inviolate vows,
The kisses
That left us weak and breathless

It is dark
It is dark by the well that still whispers.
It is darker,
It is utter darkness in the heart that bleeds
By this well,
Where magic has evaporated but memories linger

Of damp death
The rotting foliage reeks,
And the branches
Are grotesque talons of hungry vultures
For she is dead.
The one I first loved by this well.

HENRY BARLOW

Questions

- a. Discuss the suitability of the title to the subject matter of the poem. [5mks]
- b. Examine the effectiveness of
 - i) Repetition [6mks]
 - ii) Structure [6mks]
 - iii) Imagery [8mks]
- c. Discuss the tone of the whole poem. [8mks]

END

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INSTRUCTIONS

Attempt **all** questions

Fill answers in spaces provided. Don't attach any extra papers

1. You are provided with specimens M and N which are fertilizers.

Carryout the following tests on the specimens and record your observations and deductions in the table.

Test	Observation	Deduction
i) Put one spatulaful of M in a test tube, add 2cm ³ of distilled water, shake and leave the to settle for 2 minutes and add 3 drops of Universal indicator solution. Using a PH colour chart, give the PH of the solution. ii) Repeat the test in a (i)		
Using specimen N		

- b) Basing on your results in (a) suggest with a reason, which of the 2 specimens would be applied to

i) Acidic salts [2mks]

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ii) Alkaline [2mks]

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c) Suggest 2 possible effects of applying M to acidic soils. [2mks]

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2. Specimens H, I, J and K are common tools used on the farm.

a. Describe how the specimens are used together on a farm. [4mks]

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.....

- b. Using one observable feature on each specimen, describe how it's designed to perform its function efficiently. [4mks]

H

.....

I

.....

J

.....

K

.....

- c. Suggest one way of maintaining each in good working condition. [2mks]

H

.....

I

.....

J

.....

K

.....

3. Specimens R and S are animal feeds. Carry out tests on the specimens to establish the food nutrients they contain. Put 2 spatulas of R in a mortar and grind it using a pestle. When contents are fine, transfer into a beaker and add 20cm³ of distilled water then stir and leave to settle. Decant the extract into a test tube and label it R. Repeat the procedure using S to obtain extract S.

- a. Use the extracts to carry out tests in the table and record your observations and deductions in the table [8mks]

Test	Observation	Deduction
i) To 1cm ³ of extract R in a test tube, add 3 drops of iodine solution		

ii) Repeat test (i) using extract S		
iii) To 1cm ³ of extract R in a test tube, add 1cm ³ of Benedicts solution and boil		
iv) Repeat test (iii) using extract S		
v) To 1cm ³ of extract R in a test tube, add 3 drops of dilute HCl, boil and cool. Then add 5 drops of sodium hydroxide solution followed by 1cm ³ of Benedict's solution then boil.		
vi) Repeat test (v) using extract S		
vii) To 1cm ³ of extract R, add 1cm ³ of dilute sodium hydroxide solution followed by 3 drops of copper sulphate solution		
viii) Repeat test (vii) using extract S		

- b. Suggest the proportions in which you would feed the specimens to a calf which has just been weaned. Give a reason for your answer. [2mks]

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4. You are provided with specimens E, F and G.

a. Observe the specimens and describe the damage on each of the. [3mks]

E

.....

F

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G

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b. Suggest the causes of damage observed on each specimen in (a). [3mks]

E

.....

F

.....

G

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c. Suggest 2 ways in which each of the causal agents of the damage on specimens E and F spread in the field. [2mks]

E

.....

F

.....

d. Give 2 cultural methods of controlling each of the causal agents of the damage on specimens E, F and G [3mks]

E

.....

F

.....

G

.....

5. You are provided with specimens A, B, C and D which are weeds.

a. Give 2 common features of

i) Specimens A and D

ii) B and C [2mks]

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.....

b. i) Using a razor blade, cut one of the features on the roots of specimen D into 2 and observe the cut surface using a hand lens. [1mk]

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ii) What conclusions can be drawn from the observations in b (i)? [1mk]

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.....

c. Give 2 observable adaptations of A and D to the environment. [1mk]

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d. i) State the best type of herbicide for controlling B

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ii) Give reasons for your answer in (d i) above. [2mks]

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END

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S.4 PRINCIPLES AND PRACTICES

OF AGRICULTURE 527/1

TIME: 2½ hours

INSTRUCTIONS

Attempt **all** in section **A** and **4** from section **B** choosing at least **one** from each part

SECTION A

Answer all. For questions 1 (a) – (d), choose the correct alternative

1. a) The following farm activities can be performed in a crush except
A. Castrating bull calves C. Vaccinating against diseases
B. Spraying to control ticks D. Artificial insemination

b) Which one of the following is not a reason for secondary tillage?
A. burry surface vegetation
B. control weeds and crop pests
C. creates good conditions in soil for germination
D. levels the soil and enables fertilizer application

c) Anaplasmosis is caused by
A. ticks B. protozoa C. bacteria D. virus

d) Which one of the following activities illustrated the first stage in the production function?
A. overstocking in a paddock
B. insufficient use of fertilizers
C. high feeding rates for a diary cow
D. purchase of a tractor for a small area of land

For questions 2 to 5, fill answers in spaces provided

2. State the sources of nutrients for crops. [2mks]

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.....

How would you identify phosphorous deficiency in crops? [2mks]

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.....

3. Outline 5 milking practices to ensure maximum milk production.

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-
-
-
4. Explain 4 precautions that should be taken to ensure proper drying of timber.

-
-
-
-
5. Give 5 reasons why there may be change in demand for agricultural commodities.

.....

.....

SECTION B

*Attempt 4 choosing at least **one** from each part*

PART I: CROP PRODUCTION

6. a) Describe how compost manure is prepared using the indore method.
b) Outline the benefits of using composite manure as a source of plant nutrients. [6mks]
7. a) Explain the importance of vegetable growing. [7mks]
b) What problems do vegetable growers face? [7mks]
c) Explain the following practices in vegetable growing
i) Pricking out [3mks]
ii) Hardening off [3mks]
8. a) Outline the dangers of soil erosion on arable land. [10mks]
b) Describe the mechanical methods of controlling soil erosion. [10mks]

PART I: ANIMAL PRODUCTION

9. a) Outline the characteristics of a good dairy cow. [10mks]
b) Explain why some farmers in Uganda continue to rear indigenous cattle. [10]
10. a) Explain why each of the following management practices is carried out
i) Grooming [4mks]
ii) Culling [4mks]
iii) Dehorning [4mks]
b) Describe how the rubber ring method of castration is done. [8mks]
11. a) Describe how you would ensure maximum egg production in a deep litter house. [10mks]

- b) Outline the advantages and disadvantages of the free range poultry management system.

PART III: MECHANIZATION AND FARM MANAGEMENT

12. Explain the causes of fluctuations of prices of agricultural products. [20mks]
13. a) Describe how power produced in the engine is transmitted to the rear wheels of a tractor. [14mks]
b) Explain the conditions under which traction is reduced.
14. a) Explain factors that determine the type of machinery to buy on the farm. [10mks]
b) Give the major differences between 2- stroke and 4 -stroke engines. [10mks]

END

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RESOUREFUL MOCK 2018

S.6 PRINCIPLES AND PRACTICES

OF AGRICULTURE P515/2

TIME: 3 hours

INSTRUCTIONS

Number **one** is compulsory

Attempt **4** from part **B**, choosing at least **one** from each section

PART A [20 marks]

1. An experiment was carried out on a pasture in which part of the pasture was not grazed and the other was grazed. The abundance by weight of a certain grass species in the grazed and ungrazed parts of the pasture was determined after 12 months. Shoots of each grass specie were harvested, dried weighted to determine the weight.

The results are shown in the table below

Grass specie	Ungrazed part of the pasture mean weight (kg)	Grazed part of the pasture mean weight (kg)
Sporobohus pyramidalis	20.6	103.1
Hyperthermia rafa	51.6	16.2
Bracharia	52.2	3.6
Bathriochloa spp	21.5	13.7
Themeda triandra	53.6	4.1
Other grasses	48.3	21.5

- a. Using the information in the table, construct a bar graph to illustrate the relative abundance of grass species in the grazed and ungrazed parts of the pasture. [10mks]
- b. Explain the difference in abundance of the different grass species in the grazed and ungrazed parts of the pasture. [6mks]
- c. Suggest how you would improve the balance of grass species in the pasture. [4mks]

SECTION B [80 marks]

PART I: CROP PRODUCTION

2.
 - a) Explain the benefits of draining agricultural land. [6mks]
 - b) What problems may result from draining agricultural land? [10mks]
 - c) Outline the disadvantages of using surface drainage channels in draining land. [4mks]
3.
 - a) Outline the various ways through which pests cause damage to crops. [8mks]
 - b) Explain the various cultural methods of controlling crop pests. [12mks]

PART II: ANIMAL PRODUCTION

4. a) Explain the measures that farmers should take to ensure the production of good quality eggs. [12mks]
b) Outline the conditions necessary for proper hatching of eggs. [8mks]
5. a) What is meant by breeding efficiency of a herd? [2mks]
b) Outline the criteria used in measuring breeding efficiency. [3mks]
c) Explain the management practices that can be used to improve breeding efficiency of a herd. [15mks]

PART III: AGRICULTURAL ENGINEERING

6. a) Outline the limitations of using live fences on a farm. [6mks]
b) Explain the following methods of treating wooden posts for fencing
i) Hot and cold soaking [6mks]
ii) End diffusion [6mks]
c) Give 4 chemicals used to preserve wooden posts. [2mks]
7. a) Outline the factors favouring ox –cultivation in Eastern Uganda. [8mks]
b) Explain why tractor drawn implements are not commonly used in Uganda. [12mks]

PART IV: AGRICULTURAL ECONOMICS

8. a) Explain the role of an entrepreneur in farm production. [4mks]
b) What are the decisions that should be made in agricultural production? [4mks]
c) Using examples, explain the following product relationships.
i) Joint products
ii) Competitive products
iii) Supplementary products
iv) Complementary products [12mks]
9. a) What is meant by price elasticity of demand? [2mks]
b) Using illustrations, describe the following types of elasticity of demand.
i) Elastic demand
ii) Inelastic demand
iii) Unitary demand [6mks]
c) Explain the factors that may lead to drop in demand for agricultural products. [12mks]

END

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RESOUREFUL MOCK 2018

S.6 LITERATURE IN ENGLISH

P310/2 [Plays]

TIME: 3 hours

INSTRUCTIONS TO CANDIDATES

*This paper consists of **four** sections **A, B, C and D***

*Attempt **three** questions in all, **one** question must be chosen from section **B** and any **two** others from sections **A, C, and D**.*

*Not more than **one** question must be chosen from any **one** section*

*Any additional question(s) answered will **not** be marked.*

SECTION A

WILLIAM SHAKESPEARE: *King Lear*

1. To what extent does evil destroy Goodness in the play King Lear? [33mks]
2. Describe the scene in which Cornwall plucks out Gloucester's eyes. What feelings does it evoke in you? [33mks]

WILLIAM SHAKESPEARE: *Romeo and Juliet*

3. Discuss the character of Friar Lawrence and show his role in the development of the play, Romeo and Juliet. [33mks]
4. "The deaths of Romeo and Juliet are a result of inherited hatred." Discuss. [33]

WILLIAM SHAKESPEARE: *Julius Caesar*

5. Do you find the ending of the play Julius Caesar satisfying? Give reasons for your choice. [33mks]
6. Identify the character that appeals to you most in the play Julius Caesar. Give reasons for your choice. [33mks]

SECTION B

Read one passage from the book you have studied in your school and answer the questions that follow it.

7. OKOITI OMATATAH: *Lwanda Magere*

L. Magere: Don't waste your time worrying
Over such trivial matters.

Princess: My Lord,
How trivial is a husband's well being
To his wife especially if she loves
And cares for him the way I do you?

L. Magere: I can not answer that one.

Princess: Why, my Lord?

L. Magere: (*Mimics her*)
Because I never have been

And I never will be
A wife who loves and cares
For her husband the way you do.

Princess: *(laughing lightly)*

Oh my Lord,
I have never known you
To be so humorous.

L. Magere: Is that so?

Princess: Certainly my Lord.
But then don't you think'
Now is not the time for such light talk?
Let us be a bit more serious.
You see I don't want to be
The one to hurt or harm you.

L. Magere: (Alert) Woman,
What are you talking about?
What do your words mean?

Princess: Relax. My Lord, relax.
Look at it this way:
I am very close to you
You spend more time with me
Than with any of your other wives
And so, in reality, I take care of you.
But there is fear in my loving heart
That due to my ignorance of your nature,
I might bring to you harm, one day,
By inadvertently doing something
That will visit serious damage
On your mysterious body
My Lord, you must tell me
What kind of things can harm you
So that I knowingly avoid them
(Lwanda Magere is silent)

My Lord, please answer me.
It is for your own good
That I must know your great secrets.

L. Magere: Nothing is a secret about me
That is more important than my ancestors.
If you wish me well, woman,
Then always encourage me in their arm,
To always do their infallible will.
For as long as I do their will
No harm, schemed or inadvertent,

Can befall Lwanda Magere their rock.

Princess: My Lord, that is very true,
But is it wise, my dear one,
To leave everything in the lap of the gods?

L. Magere: *(Getting up with force)*
Enough of your nagging, woman.
If you don't stop tapping on a beehive,
You will suffer the consequences right away!
Never repeat those words in my homestead.
Who are you to doubt the powers above?
Now, go to your hut and sleep
The new say will soon be here.

Princess: *(Beaten)*
My lord,
Forgive my impertinence.
May the day break in peace.

L. Magere: And may the eye of the spirits
Shine on us
And our friends.
(Exit Princess; short silence)
What a terrible nagger she is.
She has become the hen
That lectures the duck
On how best to swim across a stream.
(The lights fade out on Lwanda Magere)

- a. Place the extract in its context. [10mks]
- b. What is the character of the Princess portrayed in this extract? [8mks]
- c. What lessons does the playwright teach in the passage? [6mks]
- d. What is the significance of the passage to the rest of the play? [10mks]

8. HENRIK IBSEN: *A Doll's House*

NORA *(in a hoarse whisper)*: Christine, come here.

MRS LINDE *(throwing the dress down on the sofa)*: What is the matter with you?
You look so agitated!

NORA: Come here. Do you see that letter? There, look – you can see it through
the glass in the letter –box.

MRS LINDE: Yes, I see it.

NORA: That letter is from Krogstad.

MRS LINDE: Mora –it was Krogstad who lent you the money

NORA: Yes, and now Torvald will know all about it.

MRS LINDE: Believe me, Nora, that's the best thing for both of you.

NORA: You don't know all. I forged a name.

MRS LINDE: Good heavens - !

NORA: I only want to say this to you, Christine –you must be my witness.

MRS LINDE: Your witness? What do you mean? What am I to –?

NORA: If I should go out of my mind – and it might easily happen –

MRS LINDE: Nora!

NORA: Or if anything else should happen to me –anything, for instance, that might prevent my being here –

MRS LINDE: Nora! Nora! You are quite out of your mind.

NORA: And if it should happen that there were someone who wanted to take all the responsibility, all the blame you understand –

MRS LINDE: Yes, yes –but how can you suppose?

NORA: Then you must be my witness, that it is not true, Christine. I am not out of my mind at all; I am in my right senses now, and I tell you no one else has known anything about it; and I alone, did the whole thing. Remember that.

MRS LINDE: I will, indeed. But I don't understand all this.

NORA: How should you understand it? A wonderful thing is going to happen!

MRS LINDE: A wonderful thing?

NORA: Yes, a wonderful thing? – But it is so terrible, Christine, it *mustn't* happen, not for all the world.

MRS LINDE: I will go at once and see Krogstad.

NORA: Don't go to him; he will do you some harm.

MRS LINDE: There was a time when he would gladly do anything for my sake.

NORA: He?

MRS LINDE: Where does he live?

NORA: How should I know- ? (*feeling in her pocket*), here is his card but the letter, the letter –!

HELMER (*calls from his room, knocking at the door*): Nora!

NORA (*cries out anxiously*): Oh, what's that? What do you want?

HELMER: Don't be so frightened. We are coming in: you have locked the door. Are you trying on your dress?

NORA: Yes, that's it. I look so nice, Torvald.

MRS LINDE (*who has read the card*): I see he lives at the corner here.

NORA: Yes, but it's no use. It is hopeless. The letter is lying there in the box.

MRS LINDE: And you husband keeps the key?

NORA: Yes, always.

MRS LINDE: Krogstad must ask for his letter back unread, he must find some excuse –

NORA: But it is just at this time that Torvalds generally –

MRS LINDE: You must delay him. Go in to him the meantime. I'll come back as soon as I can. (*She goes out hurriedly through the hall door*)

NORA (*goes to HELMER's door, opens it, and beeps in*): Torvald!

HELMER (*from the inner room*): Well, may I venture at last to come into my own room again? Come along. Rank, now you will see – (*Halting in the doorway*). But what is this?

RANK (*in the doorway*): I understand so, but evidently I was mistaken.

NORA: Yes, nobody is to have the chance, of admiring me in my dress until tomorrow.

HELMER: But, my dear Nora you look so worn out. Have you been practicing too much?

NORA: No, I have not practiced at all.

HELMER: But you will need to –

- a. Place the passage in its context. [10mks]
- b. What character of Nora is portrayed in the passage? [8mks]
- c. What are the themes developed in the passage? [6mks]
- d. What is the relevance of the passage to the rest of the play? [10mks]

9. **MOLIERE: *The Imaginary Invalid***

TOINETTE: Let us have pulse! Come along now! Let's have you beating properly! Ah. I'll put you in order. Hey! Here's an impudent pulse. It doesn't know me yet, I can see that. Who's your doctor?

ARGAN: Mr. Purgon.

TOINETTE: He's not on my list of the great physicians. What does he say is wrong with you?

ARGAN: He says it's my liver – other say it's my spleen.

TOINETTE: They are all ignoramuses. Your lungs are the trouble.

ARGAN: My lungs?

TOINETTE: That's it. What are symptoms?

ARGAN: I have headaches from time to time.

TOINETTE: Exactly. Lungs!

ARGAN: Sometimes I seem to have a sort of mist before my eyes.

TOINETTE: Lungs!

ARGAN: At other times I've a pain at my heart.

TOINETTE: Lungs!

ARGAN: At other times I'm weary in every limb.

TOINETTE: Lungs!

ARGAN: Then I have pains in my stomach – as if I had colic!

TOINETTE: Lungs! Have you an appetite for your food?

ARGAN: Yes, doctor.

TOINETTE: Lungs! Fond of a drop of wine?

ARGAN: Yes, doctor.

TOINETTE: Lungs again! Sleepy after a meal! Feel you want a nap?

ARGAN: Yes, doctor.

TOINETTE: Lungs! Lungs I assure you. What diet does your own doctor prescribe?

ARGAN: He says I can have – soup.

TOINETTE: The ignorance!

ARGAN: Chicken.

TOINETTE: Ignorance!

ARGAN: Veal.

TOINETTE: Ignorance!

ARGAN: Stew.

TOINETTE: Ignorance!

ARGAN: New laid eggs.

TOINETTE: Ignorance!

ARGAN: And a few prunes in the evening as a laxative.

TOINETTE: Ignorance.

ARGAN: And above all I'm to take plenty of water with my wine.

TOINETTE: *Ignorantus, ignorant, ignorantum!* You must never take water with wine, and to strengthen your blood, which is thin, you need to eat good prime beef, fat pork, and plenty of good Dutch cheese, rice puddings, chestnuts, and dry biscuits to make your blood thicken and conglutinate. Your doctor's an ass. I'll send you one of my own choice and I'll look in and see myself from time to time when I'm in the town.

ARGAN: I shall be very much obliged to you.

TOINETTE: What the deuce are you doing with this arm?

ARGAN: How d'ye mean?

TOINETTE: I should have that arm at once if I were you.

ARGAN: Why?

TOINETTE: Don't you see how it takes all the nourishment and prevents the other one from thriving?

ARGAN: Ay, but I need my arm.

TOINETTE: I should have that right eye out too if I were in your place.

ARGAN: Have my eye out?

TOINETTE: Don't you see how bad it is for the other one? It deprives it of sustenance.

Take my advice, have it out as soon as you can. You'll see a lot better with the left.

ARGAN: There's no hurry.

TOINETTE: Well, good –bye. Sorry to leave you soon but I must be a consultation on a man who died yesterday.

ARGAN: On a man who died yesterday?

TOINETTE: Yes –to see what should have been done to cure him. Till we meet again.

ARGAN: You'll excuse my not showing you to the door.

(Exit TOINETTE)

- b. What character of TOINETTE is portrayed in the passage? [8mks]
- c. What are the themes developed in the passage? [6mks]
- d. What is the significance of the passage to the rest of the play? [10mks]

SECTION C

GEORGE BERNARD SHAW: *The Devil's Disciple*

- 10. Analyze the character and role of Richard Dudgeon in the play The Devil's Disciple. [33mks]
- 11. How does the playwright portray the theme of Puritanism in the play The Devil's Disciple? [33mks]

R.B SHERIDAN: *The School for Scandal*

- 12. Discuss the role of female characters in the play The School for Scandal. [33mks]
- 13. Explain how R. B Sheridan reveals the themes of Scandal and Betrayal in the play The School for Scandal. [33mks]

ROBERT BOLT: *A Man for All Seasons*

- 14. Discuss the significance of the title, A man for All Seasons, in the play A Man for All Seasons. [33mks]
- 15. What emotions does Robert Bolt evoke in the audience in the play A Man for all Seasons? [33mks]

SECTION D

JOHN RUGANDA: *Echoes of Silence*

- 16. Explain John Ruganda's use of symbolism in the play Echoes of Silence. [33mks]
- 17. Describe the ending of Echoes of Silence. How does it affect you? [33mks]

DAVID MULWA: *Inheritance*

- 18. "Lacuna is a victim of his own folly." Discuss the validity of the above statement with close reference to the play Inheritance. [33mks]
- 19. Discuss Tamina's character and show her role in the play Inheritance. [33mks]

FRANCIS IMBUGA: *Aminata*

- 20. How is Aminata presented as a heroine in the play Aminata? [33mks]
- 21. Discuss Francis Imbuga's portrayal of the theme of women emancipation in the play Aminata. [33mks]

END

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RESOUREFUL MOCK 2018

S.4 C.R.E 223/1

TIME: 2½ hours

INSTRUCTIONS TO CANDIDATES

Candidates must answer **five** questions taking **one** from each of the sections **A, B, C, D** and **E**

All questions carry equal marks.

SECTION A: MAN IN CHANGING SOCIETY

1. a) What changes have been brought about by increasing poverty in your society? [10mks]
b) As a Christian, how can you respond to the above changes? [10mks]
2. a) What attitudes did the Africans have towards work? [10mks]
b) By use of relevant examples, show how work turned out to be a curse in the Old Testament. [10mks]
3. a) Show the effects gambling has brought about among people in your society. [10mks]
b) Mention the forms of leisure activities disapproved by St. Augustine. [10mks]

SECTION B: ORDER AND FREEDOM

4. a) Why is it difficult to promote justice in today's society? [10mks]
b) How can the Bible teaching help us to solve the problem of injustices in your society? [10mks]
5. a) Explain how one could become a leader in the African Traditional society. [10]
b) What lessons can modern leaders learn from Jesus' examples of service?
6. a) Giving examples show how African Traditional Loyalty conflicted with Christian Loyalty. [10mks]
b) How did the early believers of Jesus express their loyalty to God? [10mks]

SECTION C: LIFE

7. a) Which impact is there today that resulted from man and woman distrusting God's concern for them in terms of happiness? [10mks]
b) How do Christians understand happiness? [10mks]
8. a) Basing on any tribe of your choice, show how death and burial rites were performed in African Traditional Society. [10mks]
b) Show how the New Testament teaching can help a Christian to have hope for eternal life. [10mks]
9. a) How was the early church successful in bringing good life to Africans? [10mks]
b) How did King Solomon use his wisdom to cause harmony in Israel? [10mks]

SECTION D: MAN AND WOMAN

10. a) With examples show that sodomy (homo sexuality) is dangerous in the family today. [10mks]
b) What is the Biblical teaching on family life? [10mks]
11. a) Using specific examples show the role played by women organizations in Uganda today. [10mks]
b) In which ways does the New Testament message change the negative attitude of people towards women? [10mks]
12. a) What are the characteristics of Civil marriage? [10mks]
b) In what ways do young Christians choose their marriage partners? [10mks]

SECTION E: MAN'S RESPONSE TO GOD

13. a) Explain the nature of God as found in the Bible. [10mks]
b) How did the Traditional Africans show their belief in God? [10mks]
14. a) Explain how people in the middle age evaded God? [10mks]
b) What are the consequences of man's evasion of God in the Old Testament? [10mks]
15. a) Giving specific examples, show that the Church in the modern society supports
i) Entrepreneurship projects [5mks]
ii) Politics [5mks]
b) Show how the Apostles got involved in the world after the Pentecostal day. [10mks]

END

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