Name: .....
Index No. ...../.....Signature: .....

553/1
BiologyPaper1
2 hours 30 minutes

KAMSSA WEEKLY ASSESSMENT 2019

Uganda Certificate of Education

BIOLOGY

Paper 1

2 hours 30 minutes

Instructions to candidates

- *Answer all questions in section* **A** *and* **B** *plus two questions in Section* **C**.
- *Answers to Section* **A** ***MUST*** *be written in the boxes provided on the right hand side of each question.*
- *Answer to Section* **B** **MUST** *be written in the spaces provided.*
- *Answers to Section C must be written in the answer booklets provided.*

FOR EXAMINER'S USE ONLY

Section/Question	Marks	Examiner's No. & Sign
SEC. A		
SEC. B		
SEC. C No.		
No.		

 Turn Over

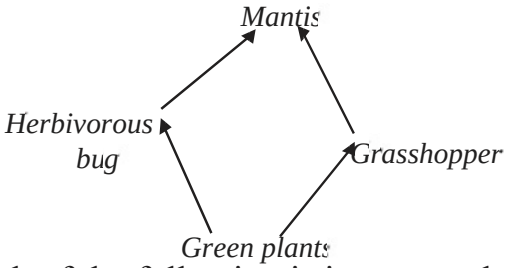
SECTION A

1. Which of the following are products of fermentation in plants?
   A. Carbon dioxide, Water and energy C. Lactic acid and energy
   B. Ethanol, water and energy D. Ethanol, carbon dioxide and energy

2. The relationship between algae and fungus in lichens is best described as:
   A. Parasitism C. Saprophytism
   B. Commensalism D. Mutualism

3. The following are both present in plant and animal cells except:
   A. Vacuole B. Cell wall C. Cytoplasm D. Mitochondria

4. Study the feeding relationship below and answer the questions about it.



Which of the following is incorrect about the feeding relationship?
   A. When mantis are eliminated. green plants will reduce a bit.
   B. When green plants are eliminated, Mantis will be affected.
   C. When herbivorous bugs die suddenly, grasshoppers are also affected.
   D. When both grasshoppers and herbivorous bugs are eliminated, all mantis are out.

5. The nitrifying bacteria responsible for the conversation of ammonium compounds to nitrates are called:
   A. Nitrobacter C. Azotobacter B. Nitrosomonas D. Rhizobium

6. Which one of the following glands is both endocrine and exocrine? A. pancreas C. pituitary gland B. Adrenal gland D. Ovary

7. How is natural immunity developed? By.....:
   A. Injection with antibiotics to the infected organism
   B. Taking preventive drugs
   C. Contracting a disease and recovering from it.
   D. Inoculation with a mild strain of pathogen.

8. The main function of sweating is to
   A. Get rid of excess salts and water from the body.
   B. Increase the need for water in the body
   C. Control body temperature
   D. Get rid of urea and carbon dioxide from the body.

9. Relative to their body weight, small animals lose more heat than large ones because small animals:

A. live exclusively on land

B. A. Have their bodies covered by less fur.

C. Have small surface area to volume ratio

D. Have large surface area to volume ratio

10. Which one of the following parts of the ear contains cells that detect sound waves to bring about hearing sensation?

E. Eustachian tube

F. Ear drum

C. Semicircular canals

D. Cochlea

11. In an experiment to determine the percentage of water in soil sample, the following readings were recorded.

Mass of crucible 50g

Mass of crucible +fresh soil.....120g

Mass of crucible + dry soil.....102.5g

What is the percentage of water in this sample of water?

A. 25% B. 41% C. 58.3% D. 85.4%

12. Which one of the following fusions leads to formation of an endosperm in higher plants?

A. Two male nuclei and one egg cell

B. B. Two eggs cells and one male nucleus

C. Two polar nuclei and one male nucleus

D. Pollen tube nucleus and two antipodal cells

13. Pitching, as an instability in fish is controlled by

A. Dorsal and pectrol fins

C. Pectrol and caudal fins

C. Pelvic and pectrol fins

D. Caudal and pelvic fins

14. A traffic guide stretched his arm to control the smooth flow of vehicles. To maintain this motion of the arm occurs when.....;

A. .Biceps relaxed and triceps contracted

B. Biceps contracted and triceps relaxed

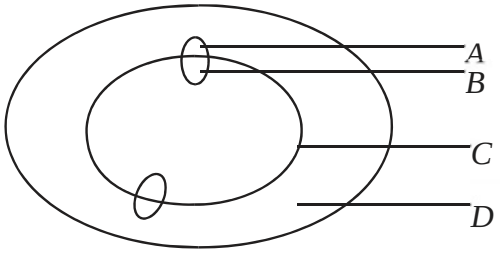
C. Both biceps and triceps relaxed

D. Both biceps and triceps contracted.

15. In which of the blood components of animals is hemoglobin found?

A. Leucocytes B. Erythrocytes C. Platelets D. Serum

16. The figure below shows a transverse section of a dicotyledonous stem:



In which of the parts labelled A to D do cells divide actively to form the greatest number of daughter cells?

17. In mammals, the part of the urinogenital system where fertilization occurs is:

A.Cervix B. Vagina C. Uterus D. Fallopian tube

18. An example of sex linked trait in man is:

A, Albinism C. Right handedness

B. Sickle cell anemia D. Hemophilia

19. The decrease in the dry weight of a seedling during the first days of germination is due to:

A .Loss of water by the seedling

B. Diffusion of enzymes from the seedling

C. Respiration of the developing embryo of seedling

A. Absorption of water from the soil by the seed coat

20. Which one of the events listed below is true about inhalation in a mammal

A. The ribs are lowered B. The diaphragm becomes dome shaped

C. The thoracic volume is reduced D. The lung air pressure is lowered

21. The rate of flow of blood in the renal artery was found to be $120cm^3$ per minute. The urea concentration in the renal artery was $20mg/60cm^3$. If the rate of flow of blood remained constant, determine the quantity of urea removed from the kidney in one hour.

A. 7200 B.120 C. 2400 D. 10

22. A pure breeding short stemmed plant was crossed with a pure breeding long stemmed plant and all their offspring, had short stems. What would be the percentage of plants with long stems if two plants from the first generation where cross pollinated?

A. 0 B. 25 C. 75 D. 50

23. The following are common to all epidermal cells of the leaf except;
A. Presence of chloroplasts
B. Presence of thin cell walls
C. Presence of transparent cuticle
D. Presence of tightly packed enlonged cells except stomata.

24. During digestion in the duodenum, starch is not converted into glucose because:
A. The pH in the duodenum is unfavorable for its conversion.
B. The acidic chyme from the stomach inhibits the action of starch digesting enzymes
C. In the duodenum, starch digesting enzymes are absent
D. Another digestive enzyme is required to complete its digestion

25. A seedling of a bean plant had a tip cut off and then exposed to unidirectional light. Which one of the following would be the correct observation after some days?
A. Not grow at all
B. Not bend at all.
C. Bend towards the source of light
D. Bend away from the source of light

26. Which of the following macro nutrients is needed for proper formation of chlorophyll?
A. Sodium B. Magnesium C. iodine D. Calcium

27. A reaction during which dilute hydrochloric acid decomposes starch to reducing sugars is called
A. Neutralization C. Hydrolysis
B. Dehydration D. Condensation

28. A hormone is best described as a secretion of:
A. The thyroid gland C. An exocrine gland
B. Adrenal glands D. An endocrine gland

29. Which one of the following is true about the anopheles' mosquito?
A. It causes malaria C. The female feeds on blood
B. It is not a true insect D. It transmits yellow fever

30. What is common about rhizomes, bulbs and corms?
A. They all have no leaves
B. Their stems run horizontally underground
C. They have underground stems
D. They have swollen aerial stems

SECTION B

31. When a tadpole undergoes metamorphosis to a frog, it undergoes in some structural changes for example while the tadpole excretes ammonia the nitrogenous waste, the frog excretes urea. The table below show the changes in percentage of ammonia excreted by the tadpole with age

Age of tadpole of frog (days)	Percentage of ammonia excreted
50	92
55	88
65	84
75	83
90	68
95	20
100	13
110	17

a) Plot a graph to represent the data in the table above. *(08marks)*

b) Describe the trend of the graph. *(04marks)*

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a)(i) Explain how is it possible for the tadpole to eliminate toxic ammonia safely whereas it is necessary for the frog to change so as to eliminate the less toxic urea. *(04marks)*

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ii) State two of the structural changes that occur in the tadpole during metamorphosis to adult frog. *(02marks)*

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32.a) What do you understand by the following terms? *(02marks)*

(i)Genotype

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(ii)Phenotype

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b) In a certain plant species, a plant with a green stem was cross pollinated with one that had a yellow stem and all their offsprings had stems with yellow and green stripes. Using suitable genetic symbols work out the genotype and phenotypic ratios if two plants each with yellow and green stripes were cross pollinated. *(06marks)*

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c) Give any two benefits of studying human genetics. *(02marks)*

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33.a) What is meant by the following ecological terms?

(i) Game cropping *(01mark)*

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(ii)Carrying capacity *(01mark)*

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b) In an ecological study it was observed that organism P feeds on a single tree plant while R feeds on P and Q feeds on R. S feeds on Q. If all letters P, Q, R and S represent living organisms in an eco-system, state an organism that is a:

(i) Primary consumer *(01mark)*

.....

(ii)Secondary consumer *(01mark)*

.....

(iii) Tertiary consumer *(01mark)*

.....

c)Draw a pyramid of numbers to represent the feeding relationship in (b) above *(02marks)*

d) In practical experiment to determine the population of fish in a certain pond, 75 fish were caught marked and released. After 3 days in the second capture, 200 fish were captured but among these 50 had the first mark.

Determine the approximate population of fish in this pond. *(02marks)*

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SECTION C

34. a) How do termites maintain soil fertility? *(06marks)*

b) Describe an experiment to determine the water retention of a sample of soil. *(09marks)*

35.a) What is seed dispersal? *(02marks)*

c) Give an example in each case,describe how seeds and fruits are adapted for the following modes of dispersal.

(i)Wind *(06marks)*

(ii) Animal (07marks)

36.Describe how chemical digestion occurs in each of the following parts of human alimentary canal

a) Mouth *(03marks)*

b) Stomach *(03marks)*

c)Duodenum *(03marks)*

d) ileum *(03marks)*

a) 37a) Explain the features that enable rapid exchange of respiratory gases at the alveolar surface. *(06marks)*

b) Describe how the intake and expulsion of respiratory gases is brought about in man. (09marks)

END