

Term II Examination-2019
S.3 PHYSICS PAPER ONE

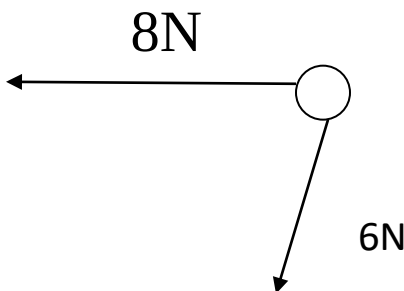
Time: 2hrs

INSTRUCTIONS

Answer all questions in this paper

1. The S.I unit for mass is
A. Grammes B. kilogram C. metre D. second
2. Convert 800 kgm^{-3} to gcm^{-3}
A. 0.8 B. 0.08 C. 8 D. 80
3. 100cm^3 of fresh water of mass 100g is mixed with 100cm^3 of sea water of mass 103g. calculate the density of the mixture
A. $1.015 \times 10^1 \text{gcm}^{-3}$ B. $1.015 \times 10^0 \text{gcm}^{-3}$
C. $1.015 \times 10^2 \text{gcm}^{-3}$ D. $1.015 \times 10^{-2} \text{gcm}^{-3}$
4. A density bottle was used to measure the density of mercury. The following measurements were taken
- mass of empty bottle =20g
- mass of bottle full of mercury =360g
- mass of bottle full of water =45g
Calculate the relative density of mercury
A. 136 B. 1.36 C. 13.6 D. 0.136
5. The following are scalar quantities except
A. mass B. Time C. Velocity D. temperature

6.



Two forces act on a body at right angles as shown above. Find the magnitude of the resultant force

- A. 16N B. 10N C. 14N D. 2N

7. Bodies are able to move without sliding because of

A. surface tension B. cohesion C. friction D. adhesion

8. which of the following states of matter have particles which are closely packed

A. solid state B. liquid state C. gaseous state D. molten state

9. The following are assumptions taken when estimating the size of an oil molecule except

A. The oil patch is circular

B. Volume of cylindrical is greater than volume of oil in spherical drop

C. all the solvent has evaporated or dissolved in water

D. the oil drop is spherical

10. An oil drop of volume $1 \times 10^{-9} \text{m}^3$ spreads on a water surface to form a patch of an area $5 \times 10^{-2} \text{m}^2$. If the patch is one molecule thick, find the thickness of the oil drop

A. $2 \times 10^{-8} \text{m}$ B. $2.0 \times 10^8 \text{m}$ C. $2 \times 10^{-6} \text{m}$ D. $2 \times 10^{-5} \text{m}$

11. The following are examples of second class levers except

A. see saw B. wheel barrow C. nut cracker D. bottle opener

12. A wheel and axle machine is constructed from a wheel of diameter 20cm and mounted on an axle of diameter 4cm.

calculate the velocity ratio of the machine

A. 20 B. 2 C. 5 D. 4

13. A block of mass 3kg held at a height of 5m above the ground is allowed to fall freely to the ground. Calculate the work done

A. 150J B. 15J C. 80J D. 1500J

14. The force acting normally per unit area of the surface is

A. friction B. centripetal C. cohesion D. pressure

15. The following are characteristics of pressure in fluids except

A. A liquid finds its own level

B. pressure at a given depth acts equally in all directions

C. pressure increases with depth

D. pressure is not equally transmitted when a force is applied on a fluid

16. A glass block's weight is 25N. when wholly immersed in water, the block appears to weigh 15N. calculate the upthrust

A. 40N B. 10N C. 25N D. 30N

17. Find the temperature in $^{\circ}\text{C}$ if the length of mercury thread is 7cm from the point and fundamental interval is 20cm

A. 35°C B. 20°C C. 70°C D. 14°C

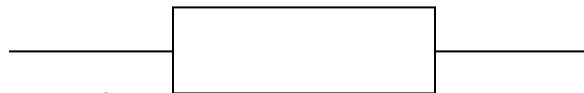
18. The image formed when an object is placed between centre of curvature and the principal focus is

A. diminished B. virtual C. magnified D. at infinity

19. The bending of light rays is

A. refraction B. eclipse C. reflection D. shadow

20.



This is a symbol for

A. Bulb B. ammeter C. rheostat D. resistor

21. A charge of 180C flows through a lamp for 2 minutes. Find the electronic current flowing through the lamp

A. 1.5A B. 90A C. 150A D. 18A

22. when the length of a conductor is increased

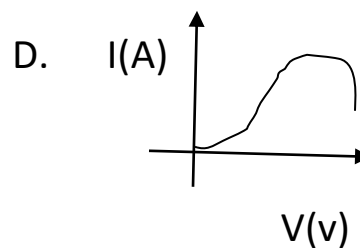
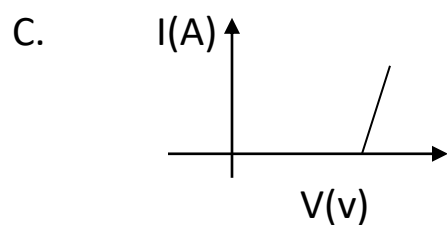
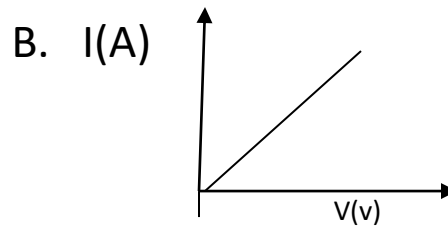
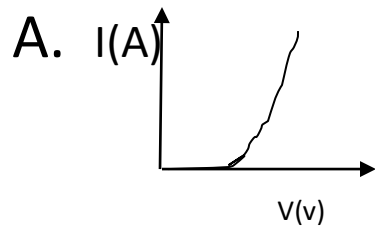
A. resistance reduces

B. resistance increases

C. resistance remains constant

D. resistance is independent of length

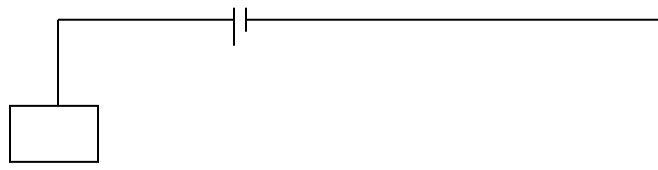
23. The graph of current against voltage for a semi conductor diode is

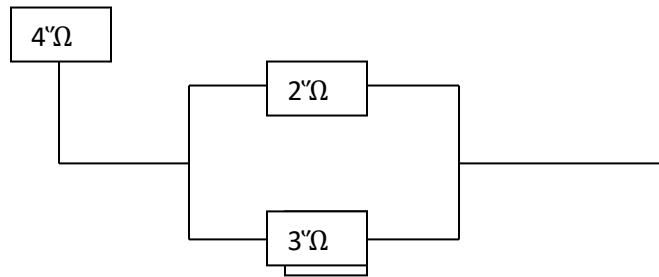


24. Four bulbs each rated at 75W operate for 120 hours. If the cost of electricity is shs 100 per unit, find the total cost of electricity used

A. sh. 100 B.sh. 3600 C.sh. 3000 D. sh.4000

25. calculate the total resistance in the circuit below

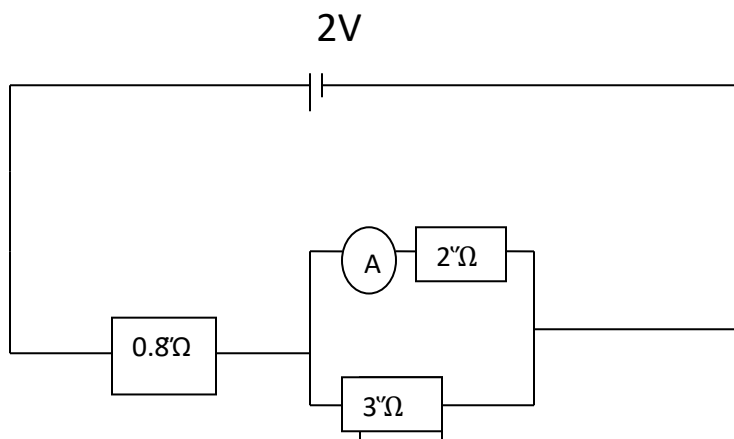




- A. 9Ω B. 6Ω C. 5.2Ω D. 5Ω

SECTION B

26. A battery of emf of 2.0V and of negligible internal resistance is connected as shown below



Find the reading of the ammeter, A

27. Define the following

a) Current

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b) Potential difference

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c) Ohm

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d) Volt

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28a) Define

i) Critical angle

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ii) Total internal reflection

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29. a) state Pascal's principle

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b) Briefly explain an experiment to show that pressure increases with depth

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30a) Define efficiency and explain why it is always less than 100%

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b) A load of 800N is raised using a scre jack whose lever arm is 49cm
has a pitch of 2.5cm. if its efficiency is 40%

Find

i) V.R

ii) M.A

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