

MID TERM 3 EXAMINATIONS 2018.

S.1 PHYSICS.

NAME: _____

SECTION A

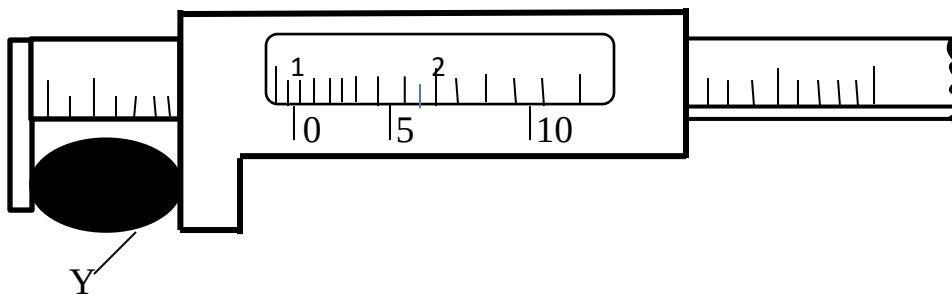
1. The S.I unit for power is

- A. Watt
- B. seconds
- C. Joule
- D. Kilogram

2. The three basic quantities of measurement are

- A Time , density and pressure
- B Length , mass and Time
- C. mass , Frequency and Power
- D. Area , current and Volume

3. The figure below shows a Vernier caliper with an object Y between its jaws.



The diameter of Y is:

- A . 1.06cm
- B. 1.05cm
- C . 1.56cm
- D. 1.60cm

4. Find the force that acts on a body of mass 0.05kg accelerating at 20 ms^{-2}

- A.1.0N
- B. 10N
- C. 100N
- D. 400N

5. Permanent magnets are made from

A. diamagnetic materials

C. Paramagnetic materials

B. ferromagnetic materials

D. dielectric materials

6. When a room is filled with smoke, the smoke tends to concentrate:

A. around the walls

C. close the roof

B. close to the flow
floor

D. mid way between the roof and the

7. Which of the following quantities is the odd man out.

A. Force

C. Momentum

B. Velocity

D. Kinetic energy

8. A force of 50 N moves an object through a distance of 200m in 40s. Find the power expended.

A. 100W

C. 200W

B. 160 W

D. 250 W

9. Two forces of 4N and 3N act at a point at right angles to each other. Find the magnitude of the resultant force.

A. 1N

C. 7N

B. 5N

D. 12N

10. When water spreads on a glass plate, the forces between its molecules and glass molecules are due to:

A. surface tension

C. Adhesion

B. Cohesion

D. Viscosity

11. A bullet of mass 5g is fired at a speed of 400m/s. How much energy does it have.

A. $\frac{1}{2} \times 5 \times 10^2 \times 400 \times 400$ Joules.
Joules.

C. $\frac{1}{2} \times 5 \times 10^{-3} \times 400 \times 400$

B. $\frac{1}{2} \times 5 \times 10^3 \times 400 \times 400$ Joules.
Joules.

D. $\frac{1}{2} \times 5 \times 10^2 \times 400 \times 400$

12. Which of the following statements are true about magnets

a. Magnets always have opposite polarities

B. A magnet can be used as a compass

C. Repulsion is the only sure test for a magnet

D. Magnets attract all metals.

13. A boy pull a block of wood with a force of 30N through a distance of 300m in 2 minutes. Find the power he develops if he pull s the block at constant speed.

A
$$\frac{30 \times 300}{2}$$

C
$$\frac{30 \times 2 \times 60}{300}$$

B
$$\frac{30 \times 300}{2 \times 60}$$

D
$$\frac{300}{2 \times 30 \times 60}$$

14. A body of mass 20kg moves with a uniform velocity of 4ms^{-1} from rest. Find it's momentum.

A 0.5ms^{-1}

C 15ms^{-1}

B 12ms^{-1}

D 30ms^{-1}

15. The temperature at which all the heat energy is removed from a substance is called.

A Kelvin temperature

C Freezing temperature

B Celsius temperature

D Absolute zero temperature

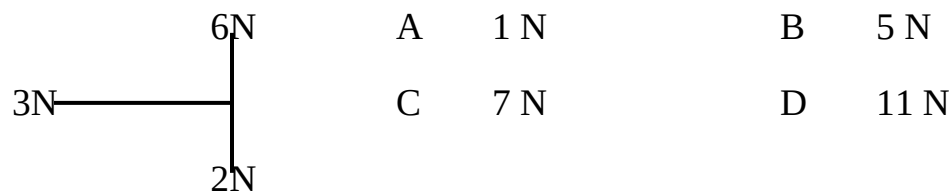
16. Which of the following physical properties changes when a body moved from the earth to the moon.

- | | | | |
|---|--------|---|---------|
| A | Mass | C | Weight |
| B | Volume | D | Density |

17. In a Brownian motion experiment, the

- A Smoke particles are seen moving about with uniform velocity.
- B Motion observed is called by the air molecules colliding with the smoke particles.
- C Size of particles are found to increase their motion.
- D Smoke cell has a vacuum within it.

18. In the figure ,magnitude of the resultant force acting on a body P is.



19.Length , Mass and current are.

- | | | | |
|---|----------------------|---|----------------------------------|
| A | Units of measurement | C | Fundamental quantities |
| B | Derived quantities | D | Measured in meters ,newton's and |

Amperes respectively

20. Brownian motion experiment, shows that molecules at gases are,

- A Stationary
- B In motion in on directionally
- C In constant random motion
- D More closely packed than molecules in liquid.

21. Force is given by the product of,

- A. Displacement and Velocity C. Acceleration and mass
B. Displacement and mass D. Velocity and mass.

22. When a car is suddenly brought to rest, passenger jerks forward because of,

- A Inertia C Gravity
B Friction D Momentum

23. When does the eclipse of the moon occur?

- A When the moon is between the sun and the earth.
B When the earth is between the sun and the moon.
C When the sun is totally eclipsed by the moon.
D When a bright ring of sunlight shows around the edge of the moon.

24. The principle of conservation of energy states that,

- A` energy is the ability to do work.
B energy is composed of kinetic and potential energy.
C energy will always be converted from one form to another.
D energy cannot be created or destroyed but it can be changed from one form into another.

25. Gas leaking from a cylinder , at one corner of a room reaches another corner by way of,

- A Diffusion C Brownian motion
B Evaporation D Osmosis

26. A razor blade floating on water sinks when a few drops of paraffin are added to the water because,

- A Paraffin is denser than water
B Surface tension of water increases.

C Surface tension of water reduces.

D Cohesion of water molecules increases.

27. A needle floats on the surface of water because of,

A adhesion

C Surface tension

B Viscosity

D Capillary attraction

28. The S.I unit of volume of liquid is,

A Litres

C decimeter cubed

B Meter cubed

D Mile liters.

29. The temperature of steam above water boiling at normal atmospheric pressure is the,

A upper fixed point

C fundamental interval

B lower fixed point

D absolute temperature

30. A rubber bullet of mass 100g is fired from a gun of mass 5kg at speed of 200ms^{-1} . Find the recoil velocity of the rifle.

A $\left(\frac{5 \times 200}{100 \times 100} \right)$

C. $\left(\frac{100 \times 200}{5 \times 1000} \right)$

B. $\left(\frac{5 \times 1000}{100 \times 200} \right)$

D. $\left(\frac{200 \times 1000}{5 \times 1000} \right)$

SECTION B

31. a) Define a joule. 1mk

b) State Newton's Law of motion and define inertia. 4mks

c) An athlete of 80kg moving at 5m/s, slides through a distance of 10m before stopping in 4s. Find the work done by friction of the athlete. 2mks

32.a) Define surface tension. 1mk

b) A small piece of filter paper is placed on a water surface and a needle gently placed on it.

i) State what happens if the water is heated gently. 3mks

33. a) What is meant by diffusion. 1mk

b) State three factors which affect the rate of diffusion. 3mks

34.a) Define: 3mks

i) Momentum

ii) Elastic collision

iii) Inelastic collision.

b) State the principle of linear momentum. 2mks

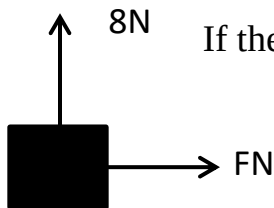
c) A trolley P of mass 150g moving with a Velocity of 20m/s collides with another stationary trolley Q of mass 100g. If P and Q move together after collision ,

Calculate: i) the momentum of P before collision

ii) The Velocity with which P and Q move after collision. 4mks

35. Define a Force and state its S.I unit. 2mks

b) Three forces act on a body as shown.



If the resultant force is 10 N, Find Force F. 2mks

END