535/1
PHYSICS
Paper
2 Hours

STANDARD HIGH SCHOOL - ZZANA

END OF TERM I EXAMINATION, 2020

S.2 PHYSICS

TIME: 2HOURS

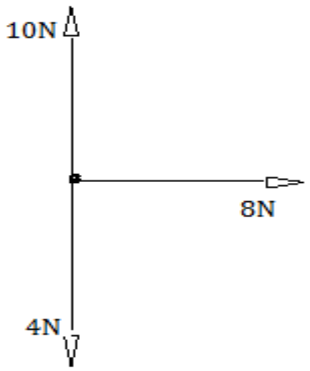
INSTRUCTIONS

- Attempt **all** questions in section **A** and **B**.
- Take g acceleration due fourth; g = $10ms^{-2}$
- Forward scanned answer sheets to stahiza2020@gmail.com.

1. A unit of energy is
   A. Joules
   B. Watts
   C. Newton
   D. Newton per metre
2. A rectangle block of metal weight 3N and measures 2cmx 3cmx4cm. What is the greatest pressure it can exert on the horizontal surface?
   A. $5.0x10^{3}Nm^{-2}$
   B. $3.75x10^{-3}Nm^{-2}$
   C. $2.50x10^{-3}$
   D. $7.5x10^{-3}Nm^{-2}$
3. The force that keep a body moving at a constant speed in a circle.
   A. Centripetal force
   B. Elastic force
   C. Gravitational force
   D. Centrifugal force
4. Which of the following is not a basic unit?
   A. Kilogram
   B. Second
   C. Meter
   D. Newton
5. An object of mass 6kg is raised from the ground to height of 4m. the work done is
   A. 100J B. 240J C. 3000J D. 2400J
6. A Newton is defined as
   A. Unit of force
   B. Force which produces an acceleration of $1m/s^{-2}$
   C. Force which gives mass of 1kg on acceleration of $1ms^{-2}$

D. Force which give any mass of an acceleration of $1ms^{-2}$

7. Forces of 10N, 8N, 4N act on an object is shown below.



Find the magntitude of the resultant force on the object.

A. 16.1N B. 10.0N C. 22.0N C. 100.0N

8. The weight of a body varies from place to place on the earth's surface because
   A. of rotation of the earth.
   B. weight acts towards the earth.
   C. of the motion of objects in the atmosphere.
   D. of the total gravitational force on the body.
9. Which of the following have the same units?
   A. Energy and Power
   B. Power and Work
   C. Energy and Work
   D. Kinetic energy and Power
10. The easily compressed state of matter is
   A. Solid C. Liquid
   B. Metal D. Gas
11. The density of a store of value $25cm^3$ is $10kgm^{-3}$. Find its mass in kg
   A. $2.5x10^{-4}$ C. $2.5x10^{2}$
   B. $2.5x10^{4}$ D. $2.5X10^{1}$
12. A bottle has a mass of 1.3kg when filed with oil and a mass of 0.9kg when half filled with the same oil. If the volume of the bottle is $500cm^3$. Find the density of the oil in kgm^{-3}

A. 800kg B. 1600 C. 1800 D. 2600

13. Surface tension in a liquid may be weakened by
   A. Lowering the temperature.
   B. Increasing the amount of liquid.
   C. Adding soap solution.

D. Increasing the density of the liquid.

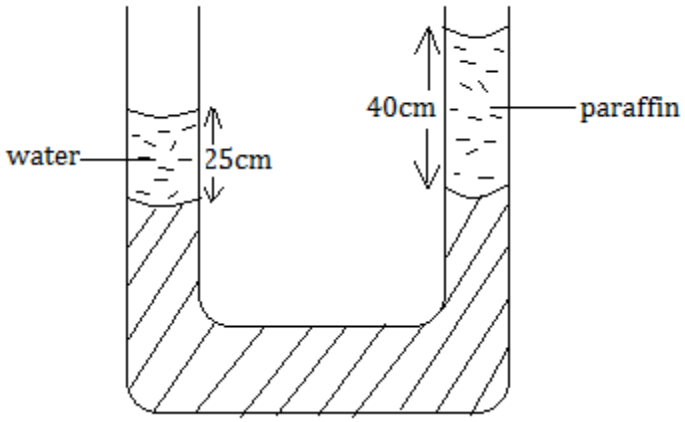
14. The width of a metre rule is accurately measured by a
    A. Micrometer screw gauge
    B. Vernier caliper
    C. Metre rule
    D. Tape measure

15. A hydraulic brake works on the principle of
    A. transmission of pressure in liquid.
    B. distribution of force in a liquid.
    C. existence of viscosity in a liquid.
    D. high density of liquid.

16. Which of the following physical properties change when a body is moved from the earth to the moon?
    A. Mass B. Volume C. Density D. Weight

17. Which of the following is a vector quantity?
    A. Speed B. Mass C. Temperature D. Displacement

18. The level of mercy in the arms of manometer is shown below.



19. The efficiency of a machine is
    A. the ratio of useful work done by the machine to the total work put into the machine.
    B. ratio of vector ratio to mechanical advantage.
    C. ratio of Work input to Work output.
    D. ratio of distance moved by head to the distance moved by effort in the same time.

20. In a crushing experiment, the car collapses because
    A. It is weakened by the hot water.
    B. Pressure outside in greater than pressure inside.
    C. It is made of very light materials

D. Pressure inside is atmosphere.

21. A hippopotamus can easily work on mud without sinking while goat will sink because
    A. a hippopotamus has more weight than that of a goat.
    B. The centre of gravity of hippopotamus is lower than that of a goat.
    C. Hippopotamus exerts less pressure on the ground than a goat.
    D. Hippopotamus exerts less pressure on the ground than a goat.
22. The area of a circle of radius 7cm in m^2 is
    A. $1.54x10^{-1}$ m^2 B. $1.54x10^{0}m^2$
    B. $1.54x10^{-2}$ ms D. $1.54x10^{2}m^2$
23. Which of the following is a scalar quantity?
    A. Weight C. Velocity
    B. Mass D. Force
24. Power is defined as
    A. rate of doing work measured in watts.
    B. Ability to do work measured in joules time.
    C. Energy x time, measured in joule time.
    D. $\frac{Energy}{Time}$ measured in joules per hour.
25. The mass of a cuboids of dimension 4mx2mx3m IS 48kg. The minimum pressure if can exert is
    A. $20Nm^{-2}$ B. $40Nm^{-2}$ C. $60Nm^{-2}$ D. $80Nm^{-2}$
26. Convert $45cm^2$ to m^2
    A. $4.5x10^{-4}$ B. $4.5x10^{-3}$ C. $4.5x10^{-2}$ D. $4.5X10^{-5}$
27. Which of the following is true about pressure in liquids?
    A. depends on the shape of the container.
    B. is directly proportional to the depth.
    C. is the same at equal depth in all liquids.
    D. increases with the surface area of the liquids.
28. Insects can move on the surface of water because of
    A. water's cohesion force
    B. capillarity.
    C. water's high density.
    D. surface tension.
29. Convert $5000khm^{-3}$ to gcm^{-3}
    A. 5 B. 0.5 C. 0.05 D. 50
30. The S.1 units for density is
    A. kgm^{-2} B. kgm^{-1} C. kgm^{-3} D kgm^{-4}

SECTION B

31.(a)Define the term energy.

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(b) State the laws of conversation of energy.

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(c) A block of mass 200g falls freely from rest through a height of 20m above the ground. Find the potential energy of the block above the ground.

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32.(a) Define the term Pressure and State its S.1 units

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(b) State the factors that determine the magnitude of pressure.

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33.(a) A. simple machines raise a load of 3000N through a distance of 0.5m when an effort of 150N is applied through a distance of 12.5m. Calculate the velocity ratio.

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(b) State two ways by which the efficiency of a machine may be increased.

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34.(a) Define the term volume

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(b) $0.4m^3$ of liquid Y and density $900kgm^{-3}$ in mixed with $0.35m^3$ of liquid Z and density $800kgm^{-3}$. Calculate the density of the mixture.

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35.(a) Define the term a force.

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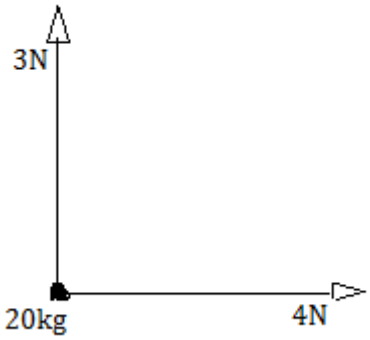
(b) Two force of 34 and 44 act on mass of 20kg at right angle at each other as shown below.



Find

(i) resultant force acting on the body

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(ii) acceleration of the body

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