BETHANY HIGH SCHOOL – NAALYA

S.2 PHYSICS

1 : 45 MINS

INSTRUCTIONS:
Attempt all questions in both sections.

SECTION A
Correct alternatives should be put in the boxes provided.

1		6		11		16		21	
2		7		12		17		22	
3		8		13		18		23	
4		9		14		19		24	
5		10		15		20		25	

1. Which one of the following physical quantities is measured using a bean balance?
   (a) Area (b) Mass (c) Time (d) Volume
2. When an object is placed 12cm from a concave mirror, an image of height 4cm is formed at 24cm from the mirror. Find the height of the object.
   (a) 2cm (b) 3cm (c) 6cm (d) 8cm

3. Whan air ccells P and Q were observed under a microscope, smoke particles in P moved faster than those in Q. Which of the following is a correct explanation for the observation above?
   (a) Cohesion of the air in P is stronger than that in Q.
   (b) Air in P is at higher temperature than that in Q
   (c) The mass of air in P is less than that in Q
   (d) Air in P is denser than that in Q

4. Which one of the following explains why Keepers are used in the storage of magnets?
   (i) To protect mutual repulsion and attraction
   (ii) To form a continuous magnetic loop.
   (iii) They are hard to magnetise and retain magnetism for a long time.
   (a) (ii) only (b) (iii) only (c) (i) and (iii) (d) (i) and (ii) only

5. The energy stored in a moving body depends on its
   (i) mass (ii) volume (iii) velocity
   (a) (i) only (b) (i) and (ii) only

(c) (i) and (iii) only (d) (i) (ii) and (iii)

6. A beaker of mass 50g has a mass of 82g when felled with density of the liquid. Find the density of the liquid.
(a) $3.0gcm^{-3}$ (b) $2.05gcm^{-3}$ (c) $1.25gcm^{-3}$ (d) $0.80gcm^{-3}$

7. Which one of the following is a set of characteristics of an image formed by a plane mirror?
(a) Real and laterally inverted (b) Virtual and same size as the object
(c) Virtual and diminished (d) Real and same size as the object.

8. Energy from the sun reaches the earth by
(a) interference (b) Convection (c) conduction (d) radiation

9. Which of the following parts of thermometer should be placed in contact with a body whose temperature is measured?
(a) Bore (b) stem (c) Bulb (d) Constriction

10. Which of the following is a set of good conductors of heat?
(a) silver, water and rubber (b) Copper, alcohol and silver
(c) Rubber, wood and aluminium (d) Aluminium, copper and silver

11. When an object is placed infront of a concave mirror at a distance less than the focal length of the mirror, the image formed is
(a) Virtual , upright and magnified (b) Virtual , upright and diminished
(c) Real , upright and magnified (d) virtual, inverted and magnified

12. A 10kg bag is raised from a height of 0.5m to a height of 2m in 2 s. Find the power expected in lifting the bag.
(a) 100w (b) 75w (c) 10w (d) 7.5 w

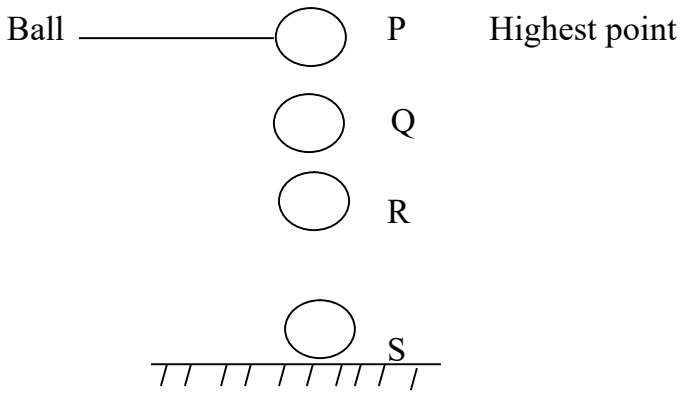
13. The energy stored in battery in a solar system is
(a) solar energy (b) Chemical energy
(c) electrical energy (d) nuclear energy

14. The temperature of steam above water boiling at normal atmospheric pressure is the
(a) Upper fixed point (b) lower fixed point
(c) fundamental interval (d0 absolute temperature

15. What is observed in a smoke cell when it is placed on ice during Brownian motion experiment? The particles
(a) move faster (b) slow down

(c) stop moving (d) continue moving with the same speed.

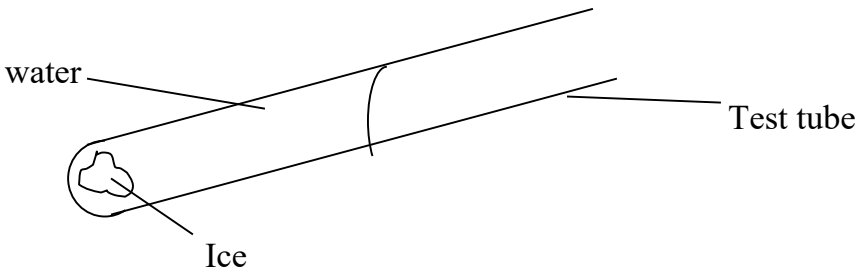
16. The following shows a ball falling vertically downwards.



which one of the following is true about the kinetic energy of the ball.

(a) kinetic energy at Q is equal to kinetic energy at R
(b) Kinetic energy at Q is less than kinetic energy at P.
(c) Kinetic energy at R is greater than kinetic energy at S
(d) Kinetic energy at P is less than kinetic energy at S

17. The figure shows attest tube containing water and ice at the bottom.



If the test is heated near, the mouth by which process does heat reach the ice?

(a) Radiation (b) Conduction (c) convection (d) evaporation

18. Pressure in solids depends on

(a) density of material (b) mass of the solid
(c) volume occupied (d) area of contact

19. The S.I units of volume of liquids is

(a) metre cubed (b) decimeter cubed
(c) decimeter cubed (d) millitres

20. Which one of the following is not a primary source of energy?

(a) Dry all (b) The sun (c) water (d) wind

21. Images formed by diverging mirrors are
(a) Laterally inverted (b) magnified (c) virtual (d) Real

22. A solid measures 5cm by 4cm by 10cm. If mass of the solid is 0.8 kg, find its density in kgm^{-3}

$\frac{0.8x10^{-6}}{5x4x10}$ (b) $\frac{0.8}{5x4x10-6^{-6}x10}$ (c) $\frac{5x4x10x10^{-6}}{0.8}$ (d) $\frac{5x4x10}{0.8x10^{-6}}$

23. Soft iron is used in telephone ear piece because it
(a) loses magnetism easily (b) gains magnetism easily
(c) gains and loses magnetism easily (d) takes long to gain magnetism

24. A smoke cell is used to demonstrate a phenomenon called
(a) Diffusion (b) Brownian (c) capillarity (d) surface tension

25. The source of geothermal energy is
(a) sun (b) earth (c) moon (d) water

SECTIOB B

26. (a) What is meant by focal point of a convex mirror? (1mk)

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(b) (i) State two practical uses of a convex mirror. (2mks)

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(ii) Explain why a convex mirror is preferred in both cases in b(i) above.(2mks)

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27. (a) What is meant by efficiency of a machine

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(b) An effort of 200N is used to lift a lead of 64o N using the pulley system below

Find the efficiency (3mks)

28. (a) Define the following

(i) work (1mk)

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(ii) Energy (1mk)

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(b) A pulley is used to raise a load of 40kg through 13m in 30s. Find the average power expected (2mks)

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29. (a) State the law of magnetism. (1mk)

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(b) State three methods in which a magnetic material can be magnetized.

30. (a) (i) Define conduction as applied to heat transfer. (1mk)

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(ii) State two factors that determine the rate of heat transfer by conduction along a metal bar.

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(b) Explain why the efficiency of a machine is always less than 100%. (2mks)

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31. (a) Define the following terms.

(i) Density (1mk)

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(ii) Volume (1mk)

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(b) A measuring cylinder is filled with water to the $100cm^3$ mark. An irregular stone of mass 150g is full immersed into the water and the new level of water became $175cm^3$. Calculate the density of the stone. (3mks)

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End