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HSSC-(P-I)-A/2024
(For All Sessions)

Paper Code	6	4	7	5

Physics (Objective)

(Group-I)

Time: 20 Minutes **Marks : 17**

Note: Write Answers to the Questions on the objective answer sheet provided. Four possible answers A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or Pen ink on the answer sheet provided.

1.1 When temperature of air increases then the speed of sound will:

(A) Decrease (B) Increase (C) Remain same (D) Be Zero

2. The distance between first and third crest in transverse wave is:

(A) 2λ (B) 3λ (C) 4λ (D) 8λ

3. Wave front and light rays are always:

(A) Parallel (B) Perpendicular (C) Antiparallel (D) $At\ 120°$

4. The advantage of graded index fibre over the step index fibre is due to no :

(A) Refraction (B) Dispersion (C) Multiple reflection (D) Scattering

5. In the gas equation $Pv = RT$, where v represents volume of:

(A) 1 g of gas (B) 1 mole of gas (C) 1 liter of gas (D) Any mass of gas

6. If $T_1 > T_2$ then $\frac{Q}{T_2} - \frac{Q}{T_1}$ is always:

(A) Zero (B) Infinity (C) Negative (D) Positive

7. The dimension of $\sqrt{\frac{f \times l}{m}}$ is

(A) $[LT^{-3}]$ (B) $[LT^{-2}]$ (C) $[MLT^{-1}]$ (D) $[LT^{-1}]$

8. The least count of a balance A is10kg, of B is 1 kg, of C is 0.1 kg and of D is 0.01kg, which is most precise:

(A) A (B) B (C) C (D) D

9. $\hat{i} \times (\hat{j} + \hat{k})$ is equal to:

(A) 1 (B) $\vec{0}$ (C) $\hat{j} - \hat{k}$ (D) $\hat{k} - \hat{j}$

10. $\vec{A} = 5\hat{i} + 7\hat{j} - 3\hat{k}$ and $\vec{B} = 2\hat{i} + 2\hat{j} - a\hat{k}$ are perpendicular vectors, the value of 'a' is:

(A) -2 (B) 8 (C) -7 (D) -8

11. A body is moving with uniform velocity, its acceleration will be:

(A) Variable (B) Zero (C) Uniform (D) Positive

12. Which of the following can be determined by finding the slope of the tangent of the velocity time graph at a point is:

(A) Acceleration (B) Momentum (C) Displacement (D) Average velocity

13. The work done in taking a body from the floor to the table top depends on:

(A) The path taken (B) Height of the table (C) Speed of the particle (D) Time taken for work

14. "$mr\omega^2$" is an expression for:

(A) Gravitational force (B) Centripetal force (C) Newton's force (D) Apparent force

15. The rate of change of angular momentum is:

(A) Force (B) Torque (C) Pressure (D) Density

16. The terminal velocity of an object in a fluid of greater viscosity is:

(A) Large (B) Small (C) Maximum (D) Zero

17. A body performing SHM, the distance covered by body in complete vibration is 20 cm. its amplitude will be:

(A) 5 cm (B) 10 cm (C) 20 cm (D) 40 cm