Inter (Part-I) 2021

Physics	Group-I	PAPER: I
Time: 20 Minutes	(OBJECTIVE TYPE)	Marks: 17

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink in the answer-book. Cutting or filling two or more circles will result in zero mark in that question.

1-1- Travel time of light from Sun to Earth is:

(a) 1 min 20 s

(b) 8 min 20 s ✓

(c) 10 min 20 s

(d) 5 h 20 s

2- The dimensions of relation mc^2 are equal to the dimensions of:

(a) Force

(b) Momentum

(c) Energy

(d) Torque ✓

3- Unit of torque in SI unit is:

(a) $N - m^{-1}$

(b) $N^{-1} - m$

(c) $N^{-1} - m^{-1}$

(d) $N - m$ ✓

4- The dot product $\hat{i} \cdot \hat{i}$ is equal to:

(a) 0

(b) 1 ✓

(c) −1

(d) $\hat{j}$

5- The maximum height attained by a projectile is:

(a) $\dfrac{v_i^2 \sin^2 \theta}{2g}$ ✓

(b) $\dfrac{v_i^2 \sin^2 \theta}{g}$

(c) $\dfrac{v_i^2 \cos^2 \theta}{2g}$

(d) $\dfrac{v_i^2 \cos^2 \theta}{g}$

6- The angle of projection of a projectile for which its maximum height and horizontal range are equal to:

(a) 45° ✓

(b) 56°

(c) 66°

(d) 76°

7- Kilowatt hour is the unit of:
(a) Power ✓   (b) Work
(c) Force   (d) Momentum

8- If a body of mass 10 kg is allowed to fall freely, its apparent weight becomes:
(a) Zero ✓   (b) 89 N
(c) 9.8 N   (d) 10 N

9- One radian is equal to:
(a) 57.3° ✓   (b) 67.3°
(c) 87.3° (d) 60°

10- A ten meter high tank is full of water. A hole appears at its middle. The speed of efflux be:
(a) $5 \ ms^{-1}$ (b) $9.9 \ ms^{-1}$ ✓
(c) $8.9 \ ms^{-1}$ (d) $5.11 \ ms^{-1}$

11- At resonance, the transfer of energy is:
(a) Zero   (b) Minimum
(c) Maximum ✓   (d) Negative

12- The frequency range of Dog ear is:
(a) $20 - 20,000$ Hz
(b) $60 - 70,000$ Hz
(c) $1000 - 120,000$ Hz
(d) $15 - 50,000$ Hz ✓

13- Beats can be heard by man when difference of frequency is not more than:
(a) 3 Hz   (b) 9 Hz
(c) 10 Hz ✓   (d) 16 Hz

14- The property of bending of light around obstacles is:
(a) Reflection   (b) Refraction
(c) Diffraction ✓   (d) Polarization

15- The least distance of distinct vision for normal eye is:

(a) 10 cm

(b) 20 cm

(c) 25 cm ✓

(d) 30 cm

16- The efficiency of diesel engine is about:

(a) 25 – 30%

(b) 35 – 40% ✓

(c) 35 – 50%

(d) 45 – 60%

17- The K.E. of molecules of an ideal gas at absolute zero will be:

(a) Zero ✓

(b) Infinite

(c) Very high

(d) Below zero