Summative Assessment – III -2025-26 **SET - B**

Model Question Paper

PHYSICS - X

Answer key

Sl. No	Value points	Score	Total Score
1	11 kV	1	1
2	A magnetic field is developed around a current carrying conductor	1	1
3	c) A is true but R is not correct	1	1
4	b) i and iii	1	1
5	a) Q It has more number of cycles per unit time b) R Displacement is maximum	½ × 4	2
6 A	Completing the ray diagram	2	2
6 B	Completing the ray diagram	2	2
7	Magenta It can reflect blue and red lights Cannot reflect green light Reflects blue and red lights form day light	½ × 4	2
8 A	Upwards Fleming's left hand rule	1 1	2
8 B	a) Moving coil loud speaker b) Motor principle Electric energy into sound energy	1 ½ ½	2
9	a) P Thinner b) Disagree. All of them have the same resistivity Resistivity does not depend on size of the object	½ × 4	2

10	Step-up Step-down Ns>Np Ns<Np Vs>Vp Vs<Vp Is<Ip Is>Ip Thickness of secondary < Thickness of primary Thickness of secondary > Thickness of primary (Any two pair)	2×1	2
11	E × EA = L x LA 150 × x = 350 (100 - x) 500 x = 35000 EA = x = 70 cm and LA = 100 – x = 30 cm	½ × 4	2
12 A	a) 256 Hz Frequency of forcing body is equal to frequency of forced body b) 288 Hz During resonance, natural frequency of forced body is equal to the frequency of forcing body c) They are in resonance During resonance the amplitude is maximum	1 1 1	3
12 B	B To hear an echo, a minimum length of 17.5 m is needed Persistence of hearing	1 1 1	3
13	h_o = +6 cm u = -60 cm v = + 40 cm f = $\frac{uv}{u-v}$ = $\frac{-60\,x\,+\,40}{-60\,-\,+4}$ = + 24 cm v = $\frac{uf}{u+f}$ = $\frac{-40\,x\,+\,24}{-40\,+\,+24}$ = + 60 cm m = $\frac{v}{u}$ = $\frac{+60}{-40}$ = $\frac{-3}{2}$ h_i = mh_o = $\frac{-3}{2}$ × +6 = - 9cm	½ × 6	3

14	i. Dispersion ii. White light entering the prism undergoes dispersion iii. All colours do not deviate equally. iv. The extent of deviation depends on the wavelength v. Violet, having least wavelength, deviates most and goes near the base vi. Red, having the largest wavelength, deviates the least vii. The deviation repeats in the second surface (Any six points)	½ × 6	3
15 A	a) Higher the power, lower the resistance b) R = $\frac{V^2}{P}$ = $\frac{400 \times 400}{1600}$ = 100 Ω P = $\frac{V^2}{R}$ = $\frac{200 \times 200}{100}$ = 400 W	1 ½ × 4	3
15 B	E = $\frac{Pt}{1000}$ kWh **60 W lamps** E = $\frac{4 \times 60 \times 30 \times 3}{1000}$ = 21.6 kWh **40 W lamps** E = $\frac{6 \times 40 \times 30 \times 4}{1000}$ = 28.8 kWh Total energy = (21.6 + 28.8) kWh = 50. 4 kWh	1 1 1 1	3
16	a) Figure B, any correct justification b) Increase the number of coils per unit length Increase the current Increase the thickness of soft iron core (any 2)	1 1 1	3
17	i. Cut a paper in the shape of right triangle ii. Colour the sloping edge to see an inclined plane iii. Wind it over a round pencil and observe	1 1 1	3

18 A	a) The child C In the armature of any generator AC alone is formed. But the output can be made AC or DC b) AC If magnet is the rotor, there is no working of split ring to convert AC into DC	2 2	4
18 B	• In A and D the bulbs will not glow • Less brightness for B • Maximum brightness for C • No mutual induction in DC circuits • A and D are DC circuits • B and C are having AC. Mutual induction takes place in them. • C having soft core gets more current	½ × 8	4