SET - A

Summative Assessment – III -2025-26 Model Question Paper PHYSICS - X Answer key

Qn No	Answer	Score	Total Score
	SECTION A	I	
1	b) i and iii	1	(i)
2	a) Both Statement and reason are correct, and the reason explains the Statement.	1	Øi
3	b) 200 J	1	1
4	b) 1 – iv, 2- iii, 3 – ii, 4 - i	1	1
	SECTION B		
5A	Persistence of Vision Correct Explanation	1	2
5B	Yellow Blue Correct Explanation	1 ½	2
6	$d = \frac{(v \times t)}{2}$ $= \frac{(1500 \text{ m/s} \times 4\text{s})}{2}$ $= 3000 \text{ m}$	1	2
7	a) Concave lens is a diverging lens b)	1	2
8	a) Towards Qb) Change the poles of the ring magnet OR Change the terminals of the battery	1	2
9	$P = \frac{V^2}{R}$	1	2
IJ	$V = \sqrt{(P \times R)}$ $V = \sqrt{(120 \text{ W} \times 30 \Omega)}$ $= \sqrt{3600}$ $= 60 \text{ V}$	1	2

10	a) DC source is connected in primary circuit. Correct explanationb) Connect AC source instead of DC	1 1	2
11A	Mechanical advantage = $\frac{\text{Radius of wheel}}{\text{Radius of axle}}$	1	
	$= \frac{0.8 \ m}{0.2 \ m} = 4$		2
	Force required = $\frac{\text{Load}}{\text{Mechanical advantage}}$	1	
	$= \frac{500 \text{ kg} \times 9.8 \text{ m/s}^2}{4}$ $= 1225 \text{ N}$, +	Sio
11D	OR		
11B	Mechanical Advantage (MA) = $\frac{\text{Length}}{\text{Height}}$	1	2
	$=\frac{5 \text{ m}}{}$		_
	3m	1	
	= 1.67 SECTION C		
	a) amplitude, a = 0.2 m	1	·
12A	b) Number of vibrations of the particles of the medium in 1s	1	
12/1	frequency, $f = \frac{3}{3} = 1 \text{ Hz}$	1	3
	c) $T = \frac{1}{f} = 1s$		
	a) Transverse wave or Longitudinal	1	
12B	b) $v = f\lambda$	1	3
	c) Distance travelled by the wave in 1s	1	
	$= 2Hz \times 40m = 80 \text{ m/s}$		
13	a) Convex Lens, any correct justification	1	
	b)	2	3
	2F F 2F		

14 A	a) 60 V	1	
	b) input power t = output power output power = 600 W	1 1	3
14 B	$\frac{V_p}{V_S} = \frac{I_S}{I_p}; I_S = 4 A$	1 1	3
	$\frac{N_p}{N_S} = \frac{V_p}{V_S} = 2:1$	1	
	No, Out put power = $V_S \times I_S$		
	$= 110 \times 4 = 440 \text{ W}$		0)
	Correct explanation	一、七	
15	a) leaves - Dark Flowers - Red b) Yellow Flower – Red	1 1	3
16	Television:		
	$E_{TV} = 1 \times 200 \text{W} \times 5 \text{ h} = 1000 \text{ Wh}$		
	LED Bulbs	1	
	$E_{bulbs} = 5 \times 40W \times 4 \text{ h} = 800 \text{ Wh}$		
	Total Daily $E = 1000Wh + 800Wh = 1800 Wh$	1	3
	Total Monthly E (Wh) = 1800 Whday × 30 days		
	= 54000Wh	1	
	Total Monthly E (kWh) = $\frac{54000}{1000\text{Wh}}$ = 54kWh		
	$Cost = Units consumed (kWh) \times Cost per unit$		
	Cost = 54units × ₹5.00/unit		
	Total Cost = ₹270.00		
C	a) First Order	1	
	$MA = \frac{Load}{-ca}$	1	
17	Effort	1	3
	$5 = \frac{\text{Effort Load}}{50 \text{ N}}$	1	
	$Load = 5 \times 50 \text{ N}$	1	
	Load = 250 N		

	SECTION D		
18 A	T-	1 1 2	
18 F	a) Negative	1 1 1 1 1	
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