SECOND YEAR HIGHER SECONDARY SECOND TERMINAL EXAM DEC 2019 – PHYSICS ANSWER KEY

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Qn	Value points	Score
1	Aluminium	1
2	Induced emf	1
3	polarization	1
4	F=R/2 = 10 cm	1
5	Quantum theory	1
6	r P Q III	2
	$B \times 2\pi r = \mu_0 I$, $B = \frac{\mu_0 I}{2\pi r}$	
7	a) Deflection produced per unit voltage	1
	b) Increase in number of turns	
	increases resistance. Thus voltage	
	sensitivity remains constant.	1
8	a) $I_{rms} = i_m/\sqrt{2}$, $V_{rms} = v_m/\sqrt{2}$	1
	b) v _m = 230 V	1
9	Moves perpendicular to electric and magnetic	2
	field, shows transverse wave nature, no	
	material medium required, not deflected in	
10	electric and magnetic field	2
10	Object 2F F 2F Image	2
	Ray Diagram for Object Located at 2F	
	Located at 2F u=-2F,v=2F	
11	h h	2
	$\lambda = \frac{1}{P} = \frac{1}{m v} = 2.608 \times 10^{-34} \text{ m}$	_
12	m=fo/fe =100 tube length =fo+fe =101c m	2
13	Label length =10 Te =10 Te III	2
	L'altroit	_
	Medium 2 Medium 2 Refracted	
	$\sin i = \frac{BC}{AC} = \frac{v_1 \tau}{AC} \qquad \sin r = \frac{AE}{AC} = \frac{v_2 \tau}{AC}$ $n_1 \sin i = n_2 \sin r$	
14		
	I Micro wave : fadar system : microwave oven	
	Micro wave : radar system , microwave oven X – rav: To study structure of atoms. detect	
	X – ray: To study structure of atoms, detect hidden materials	
15	X – ray: To study structure of atoms, detect hidden materials	1
15	X – ray: To study structure of atoms, detect hidden materials $\phi = \frac{q}{2}$	1
15	X – ray: To study structure of atoms, detect hidden materials $\phi = \frac{q}{}$	1
15	X – ray: To study structure of atoms, detect hidden materials $\phi = \frac{q}{\varepsilon_0}$ a)	1
15	X – ray: To study structure of atoms, detect hidden materials $\phi = \frac{q}{\varepsilon_0}$ a)	1 2
15	X – ray: To study structure of atoms, detect hidden materials $\phi = \frac{q}{\varepsilon_0}$ a) $\phi = \frac{q}{\varepsilon_0}$ b) $E \times (2A) = \frac{\sigma A}{\varepsilon_0}$	
	X – ray: To study structure of atoms, detect hidden materials $\phi = \frac{q}{\varepsilon_0}$ a) $\phi = \frac{q}{\varepsilon_0}$ b) $E \times (2A) = \frac{\sigma A}{\varepsilon_0}$	2
15	X – ray: To study structure of atoms, detect hidden materials $\phi = \frac{q}{\varepsilon_0}$ a) $\phi = \frac{q}{\varepsilon_0}$ b) $E \times (2A) = \frac{\sigma A}{\varepsilon_0}$	
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	$X - ray: \text{ To study structure of atoms, detect}$ hidden materials $\phi = \frac{q}{\varepsilon_0}$ a) $\phi = \frac{q}{\varepsilon_0}$ b) $E \times (2A) = \frac{\sigma A}{\varepsilon_0}$ $V(R) = \frac{1}{4\pi\varepsilon_0} \left(\frac{\rho}{R} + \frac{q}{R}\right)$ $V(r) - V(R) = \frac{q}{4\pi\varepsilon_0} \left(\frac{1}{r} - \frac{1}{R}\right)$	2
		2

b) Derivation of P/Q =R/S a) Current due to time varying electric field b) λ = 2 π /k = 0.01256 m f=w/2 π = 0.238x10 ¹¹ Hz 19 20 a) statement of laws of refraction b)n=c/v=1.5			2
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