

II - REVISION EXAM - 2019

STD : 12

PHYSICS - SCORING KEY

Q.No	ANSWER	MARK	Q.No	ANSWER	MARK
<b>PART-I</b>					
1.	(c) inside the sphere	1	18.	$F = BIL$ substitution	1 1/2
2.	(c) no current is drawn from the cell	1		$F = 5 \times 10^{-3} \text{ N}$	1/2
3.	(c) the velocity of the particle	1	19.	Any two differences	1+1
4.	(b) Capacitor	1	20.	Rayleigh scattering Correct statement of Law	1 1
5.	(a) pure line spectrum	1	21.	$\lambda_{\min} = \frac{12400 \text{ \AA}}{V}$ substitution	1 1/2
6.	(c) angular momentum	1		$\lambda_{\min} = 0.0124 \text{ \AA}$ (OR) Equivalent value	1/2
7.	(a) zero	1	22.	Cut-off potential - correct statement	2
8.	(a) proton	1	23.	formula and step method substitution	1 1/2
9.	(d) A.B	1		6.25%	1/2
10.	(a) 1055 kHz	1	24.	Universal gate Reason	1 1
11.	(c) metre <sup>-1</sup>	1	<b>PART-III</b>		
12.	(b) minority carriers	1	25.	Any 3 properties of lines of force	3
13.	(a) $\alpha \beta \gamma$	1	26.	6 points of spl. features of Lorentz force	3
14.	(c) Capacitance of a capacitor	1	27.	$M = -e \frac{dI}{dt}$ substitution	1 1
15.	(d) zero	1		$M = 6.25 \text{ mH}$	1
<b>PART-II</b>					
16.	One Coulomb - correct definition	2			
17.	Internal resistance [Resistance offered to the flow of current by the electrolyte]	2			

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28.	Centre of Newton's ring is dark [the wave reflected from the denser glass plate has suffered a phase diff of $\pi$ ]	3	34.	<b>PART-IV</b> Van de Graaff generator Diagram Principle $5 \times 10^7 V$ Construction Working Uses	1 $\frac{1}{2} + \frac{1}{2}$ 1 $1\frac{1}{2}$ $\frac{1}{2}$
29.	Any 6 properties of Cathode rays	3	(OR) Radius of $n^{\text{th}}$ orbit Coulomb's force = $\frac{1}{4\pi\epsilon_0} \cdot \frac{Ze^2}{r_n^2}$ Centripetal force = $m v_n \omega_n^2$ $\omega_n^2 = \frac{Ze^2}{4\pi\epsilon_0 m r_n^3}$ Angular momentum $L = m r_n^2 \omega_n$ $L = \frac{n h}{2\pi}$ $\omega_n^2 = \frac{n^2 h^4}{4\pi^2 m^2 r_n^4}$ Finding $r_n = \frac{n^2 h^2 \epsilon_0}{\pi m Z e^2}$	1 $\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$ 1 1	
30.	Radio carbon dating ${}^7N^{14} + {}^0n^1 \rightarrow {}^6C^{14*} + {}^1H^1$ $T_{1/2} = 5570 \text{ years}$ Ratio of $C^{14}$ to $C^{12}$ is $1:10^6$ Explanation	1 $\frac{1}{2}$ $\frac{1}{2}$ 1	35. (i) Ammeter Diagram Conversion Deriving $s$ $\frac{1}{R_a} = \frac{1}{G} + \frac{1}{S}$ (ii) Voltmeter Diagram Conversion Deriving $R$ $R_v = R + G$ (OR) Bandwidth Diagram Deriving $\delta = \frac{\lambda d}{D}$ Bright fringe Dark fringe Deriving $\beta = \frac{\lambda}{d}$	$\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ 1 1 1 1	
31.	De-Morgan's theorem 2 - statements Truth table	2 1			
32.	$\beta = \frac{I_c}{I_B}$ $\alpha = \frac{\beta}{1+\beta}$ Substitution $\beta = 500$ $\alpha = 0.998$	$\frac{1}{2}$ $\frac{1}{2}$ 1 $\frac{1}{2}$ $\frac{1}{2}$			
33.	Principle of RADAR Any 4 Uses	1 2			

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36.	G.M Counter Diagram Principle Construction Working (OR) $E = mc^2$ Deriving $dE_k = mv \, dv + v^2 \, dm$ Deriving $dE_k = c^2 \, dm$ Deriving Total energy $E = mc^2$	1 1 1½ 1½ 2 2 1			
37.	Transformer Principle Diagram Construction Working (OR) Oscillator - Defn $f = \frac{1}{2\pi} \sqrt{\frac{C_1 + C_2}{L_1 C_2}}$ Substitution $f = \omega$	1 1 1 2 2 1 1 1		SUBJECT TEACHERS: 1. Mr. Annie Mathew 2. Mr. P. MURUGESAN 3. Mr. M. SARAVANAN 4. Mrs. Latha 5. Mrs. Brindha Zeby 6. Mr. M. Manikandan	
38.	3 parameter of OP-AMP Summing amplifier Diagram $i_1 + i_2 = i_f$ $V_{out} = -\left[\frac{R_f}{R_1} V_1 + \frac{R_f}{R_2} V_2\right]$ $V_{out} = -(V_1 + V_2)$ (OR) AM Receiver Block Diagram Explanation	2 1 1 1 1 2½ 2½		SIGNATURE OF THE HEADMASTER	

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