Scoring Indicators

COURSE NAME : Applied Physics -II

COURSE CODE : 2003 **QID : 2106220111**

<table>
<tr><th>Q.No.</th><th>Scoring Indicators</th><th>Split Score</th><th>Sub Total</th><th>Total score</th></tr>
<tr><td></td><td>PART A</td><td></td><td></td><td>9</td></tr>
<tr><td>I.1</td><td>Any one example</td><td>1</td><td>1</td><td rowspan="10"></td></tr>
<tr><td>I.2</td><td>Brief explanation of reverberation</td><td>1</td><td>1</td></tr>
<tr><td>I.3</td><td>Refraction</td><td>1</td><td>1</td></tr>
<tr><td>I.4</td><td>Diopter or D</td><td>1</td><td>1</td></tr>
<tr><td>I.5</td><td>Statement of Ohm’s law or equation</td><td>1</td><td>1</td></tr>
<tr><td>I.6</td><td>parallel</td><td>1</td><td>1</td></tr>
<tr><td>I.7</td><td>P-region to positive and N-region to negative of a battery</td><td>1</td><td>1</td></tr>
<tr><td>I.8</td><td>True</td><td>1</td><td>1</td></tr>
<tr><td>I.9</td><td>Any one application</td><td>1</td><td>1</td></tr>
<tr><td></td><td>PART B</td><td></td><td></td><td>30</td></tr>
<tr><td>II.1</td><td><table><tr><td>Column A</td><td>Column B</td><td></td></tr><tr><td>Displacement of a particle executing simple harmonic motion</td><td>$y=\sin\omega t$</td><td>1</td></tr><tr><td>Period of simple harmonic motion</td><td>$\frac{2\pi}{\omega}$</td><td>1</td></tr><tr><td>Frequency of simple harmonic motion</td><td>$\frac{1}{T}$</td><td>1</td></tr></table></td><td></td><td>3</td><td rowspan="2"></td></tr>
<tr><td>II.2</td><td>Transverse wave</td><td>1 ½</td><td>3</td></tr>
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	Longitudinal wave	1 ½		
II.3	Define beats or explain the formation of beats	3	3	
II.4	Any three uses - 1 mark for each	3	3	
II.5	Define total internal reflection Denser medium to rarer medium Angle of incidence greater than critical angle	1 1 1	3	
II.6	Resistivity $\rho = \frac{RA}{L}$ Substitution Final Answer $\rho = 1.57 \times 10^{-6}\ \Omega$ m	1 1 1	3	
II.7	Any three characteristics- 1 mark for each	3	3	
II.8	Spontaneous emission Stimulated emission	1 ½ 1 ½	3	
II.9	Explanation of transistor as an amplifier	3	3	
II.10	P-type semiconductor N-type semiconductor (Dopants, majority carriers etc)	1 ½ 1 ½	3	
	PART C			
III.1	Write any four characteristics (Amplitude, phase, period, frequency, wavelength, wave velocity)- 1 mark for each Wave velocity $= \frac{distance}{time}$ $v = \frac{\lambda}{T}$ $v = \lambda f$	4 1 1 1	7	

III.2	Writing the given data Frequency f = 1/T f = 1/(1/200) = 200 Hz Wave velocity v = λf 340 = λ x 200 λ = 340/200 = 1.7 m	1 1 1 2 1 1	7	
III.3	Description of apparatus Resolving power	5 2	7	
III.4	m = 2 $\frac{v}{u} = 2$ u = v/2 = 72/2 = 36 cm -1/u + 1/v = 1/f Substitution f = 24 cm = 0.24 m P= 1/f P = 1/0.24 P = 4.17 D	1 1 1 1 1 1 1	7	
III.5	Diagram of image formation- 2 mark for each Image properties – 1 ½ each	4 3	7	
III.6	Figure of optical fiber Explanation Three applications of optical fiber- 1 mark for each	2 2 3	7	
III.7	Figure of meter bridge	2	7	

	Description of apparatus Applying Wheatstone's principle Equation for unknown resistance	2 2 1		
III.8	Coulomb's law Electric field Electric potential	3 2 2	7	
III.9	Diagram of moving coil galvanometer Description of apparatus Theory Necessary equations	2 2 1 ½ 1 ½	7	
III.10	Effective resistance of 12Ω and 6Ω in parallel, $1/R = 1/R_1 + 1/R_2$ $1/R = 1/12 + 1/6$ $R = 4\Omega$ 4Ω and 8Ω in series, its effective resistance, $R = R_1 + R_2$ $R = 4 + 8$ $= 12\Omega$	 1½ 1 1 1½ 1 1	7	
III.11	Diagram Description of apparatus Working	2 2 3		
III.12	Einstein's photoelectric equation with explanation	3		

	Laws of photoelectric effect: 1^{st} law 2^{nd} law 3^{rd} law	 2 1 1		