



Summary Answer Sheet

Student Code

Theory
Question III
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Question	Answer	Maximum Marks
III.1	$I(\theta) = \beta E_0^2 \left[1 + \cos\left(\frac{\omega d \sin \theta}{c}\right) \right]$	1.0
III.2	$I(\theta) = \beta E_0^2 \left[1 + \cos\frac{\omega}{c} (d \sin \theta - t(\mu - 1)) \right]$	1.0
III.3	a. $I(\theta) = \beta E_0^2 \left[1 + \frac{1}{\sqrt{2}} \cos\left(\frac{\omega d \sin \theta}{c}\right) \right]$ b. $I_{max} = \beta E_0^2 \left[1 + \frac{1}{\sqrt{2}} \right]$ c. $I_{min} = \beta E_0^2 \left[1 - \frac{1}{\sqrt{2}} \right]$	2.0
III.4	a. $\vec{E}_1(z = b) = \frac{1}{\sqrt{2}} E_0 \cos(\omega t - kb - \gamma) \hat{i}'$ b. $\vec{E}_1(z = c) = \frac{1}{\sqrt{2}} E_0 \cos \gamma \cos(\omega t - kc - \gamma) \hat{i}$ c. $\alpha = \gamma$	2.0
III.5	a. $\vec{E}_{Eq} = E_0 \cos(\omega t) \hat{i}'$ b. State of polarization = Linear	0.5
III.6	a. $\vec{E}_{NP} = \frac{E_0}{\sqrt{2}} (\hat{i} \cos(\omega t) + \hat{j} \sin(\omega t))$ b. State of polarization = Circular	0.5



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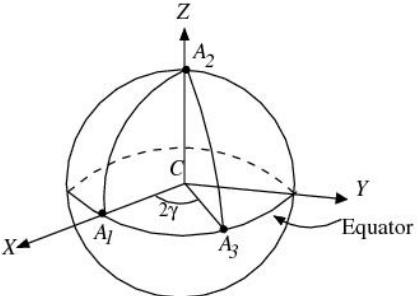
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Theory
Question

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III.7	
III.8	$S = 2\alpha$

1.5
1.5