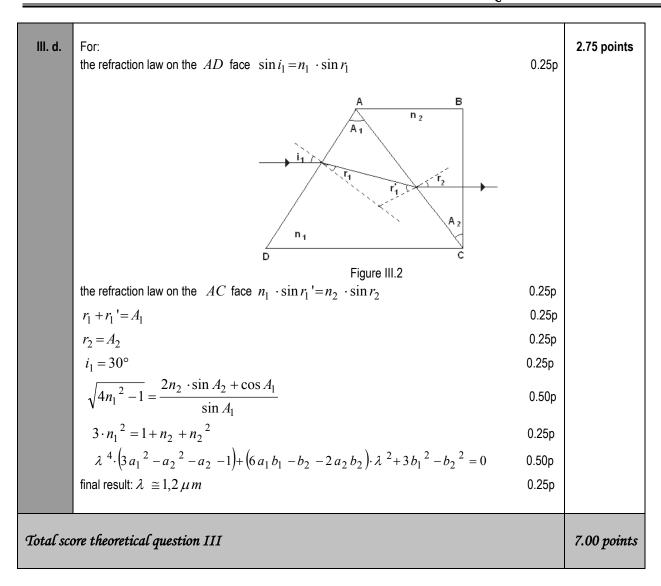
## MARKING SCHEME FOR ANSWERS TO THE THEORETICAL QUESTION III -OPTICS

Part	MARKING SCHEME - THE THEORETICAL QUESTION III - PRISMS	Total Scores
III. a.	For: $n_{1}(\lambda_{0}) = n_{2}(\lambda_{0}) \qquad 0.50 p$ $\lambda_{0} = \sqrt{\frac{b_{1} - b_{2}}{a_{2} - a_{1}}} \qquad 0.25 p$ final result: $\lambda_{0} = 500 nm \qquad 0.25 p$ $n_{1}(\lambda_{0}) = n_{2}(\lambda_{0}) = 1,5 \qquad 0.25 p$	1.25 points
III. b.	For the rays with different wavelength ( $\lambda_{red}$ , $\lambda_{0}$ , $\lambda_{violet}$ ) having the same incidence angle on first prism, the paths are illustrated in the figure III.1	2.00 points
III. c.	For:	1.00 point
	$n_{1}(\lambda_{0}) = n_{2}(\lambda_{0}) = \frac{\sin\frac{\delta_{\min} + A'}{2}}{\sin\frac{A'}{2}}$ $0.25p$	
	$m(\hat{A}') = 30^{\circ} $ 0.25p	
	$m(\hat{A}') = 30^{\circ}$ $\delta_{\min} = 2\arcsin\left(\frac{3}{2}\cdot\sin\frac{A'}{2}\right) - \frac{A'}{2}$ 0.25p	
	final result: $\delta_{\min}\cong 30,7^{\circ}$ 0.25p	

Marking scheme – Prisms

Page 1 of 2



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Marking scheme – Prisms Page 2 of 2