

Question number	Answer	Notes	Marks
7 (a)	any three from: paper / pen / pencil; protractor; ruler / straight edge; light source (& power supply); (optical) pins;	allow cork board ignore unqualified 'light' allow needles	3
(b) (i)	line drawn at P at 90° to the flat surface;	judge by eye	1
(ii)	41° ; 21° ;	tolerance $\pm 3^\circ$ no ECF	2
(iii)	change of medium / eq; change in speed / wavelength;	allow change of refractive index / (optical) density ignore changes direction reject second mark if contradiction seen	2