Question number	Answer	Notes	Marks
7 (a) (i)	C – 51°; Angle should be measured and cannot be either A, B or D.		1
(ii)	refractive index = sin (i)/sin (r);	allow n, η for refractive index	1
(iii)	substitution; rearrangement; correct evaluation; correct answer: 31 degrees e.g refractive index = sin (i)/sin (r) 1.52 = sin(51)/sin(r) sin(r) = sin(51)/1.52 sin(r) = 0.511… r = $\sin^{-1}$(0.511…) = 30.7… degrees	allow ECF from (i) answers of 26.66…, 28.76…, 32.06… all score 3 marks ECF	3
(b) (i)	use of formula sin c = 1/n; substitution; correct evaluation; correct answer: 41 (degrees) e.g. sin c = 1/n sin c = 1/1.52 c = $\sin^{-1}$(1/1.52) = 41.1 (degrees)		3
(ii)	total internal reflection (TIR) / angle of incidence is above the critical angle and so reflects;		1

Total for Question 7 = 9 marks