D2   Polarisation

For each polariser, the angle given is the one for which light is transmitted and is given clockwise from the vertical. Where there are multiple answers required, both must be correct for the mark.

D2.1   Horizontally polarised light is shone on a polariser that is angled at 35° to the vertical. The incoming light has amplitude 200 V m^{-1} and intensity 53 W m^{-2}. Work out (a) the amplitude and (b) intensity of the transmitted light.

D2.2   Unpolarised light of intensity 4.0 W m^{-2} is incident on a polariser placed at 15° from the vertical. State the intensity of the transmitted light.

Vertically polarised light of amplitude 100 V m^{-1} and intensity 14 W m^{-2} is incident on the following combinations of polarisers (P1, then P2, then P3). Complete the values indicated in the table below. The polariser angles P1, P2 and P3 are from the vertical.

	Polariser angle /°:			Transmitted light		
	P1	P2	P3	Amplitude /V m^{-1}	Intensity /W m^{-2}	Angle (to vertical)
D2.3	0	20	0	(a)	(b)	
D2.4	90	35	n/a		(a)	
D2.5	15	50	50	(a)		(b)
D2.6	0	45	90		(a)	(b)
D2.7	15	105	60	(a)		
D2.8	10	165	95	(a)	(b)	(c)