Question number			Answer	Notes	Marks
10	(a)	(i)	B radio waves		1
		(ii)	C Microwaves and radio waves travel at the same speed in a vacuum.		1
		(iii)	any one sensible property; e.g. travels (very) fast travel at speed of light can be coded can travel in vacuum	Allow can penetrate the ionosphere, can carry more information (than radio) higher frequency /shorter wavelength (than radio) minimal diffraction	1
	(b)		Quantities substituted in the correct equation; Rearrangement; Calculation; Conversion from hours/days to s at any point (implicit if correct ans in km); e.g. $3.1 = \dfrac{2 \times \pi \times r}{(24 \times 3600)}$ $r = \dfrac{3.1 \times 24 \times 3600}{2\pi}$ $r = 42\,600$ km	No credit for quoting the equation as $v = 2\pi r/T$ is given on page 2. sub and rearrange in either order allow 3600 or 86 400 seen Allow 42630, 42628 Allow 42622 (from $\pi = 3.142$)	4