Question number			Answer	Accept	Reject	Marks
6	(a)	(i)	(Signal has) two values; Only;	On or off, 0 or 1, two signal strengths Binary		2
		(ii)	Any two of The idea of increased frequency (of wave or modulation); The idea of regeneration (allowing more data to arrive); The idea of using increased bandwidth; The idea of using additional (signal) level; The idea of multiplexing (e.g. use more than one channel);	send more bits/sparks, send morse code more quickly, send other letters The response should be about the signal, so ignore: idea of just sending a longer message using optical fibre(s)		2
	(b)	(i)	(wave) speed = frequency x wavelength	$v = f \times \lambda$ (accept rearrangements)		1
		(ii)	Substitution; Calculation; e.g.: 820 000 x 366 = 300 120 000 or 300 000 000 or 3 x 10^8 (m/s)	Bald answer;; Power of ten error (for 1 mark) e.g. 300 000 m/s Alternative <u>correct</u> units (for 2 marks) e.g. 300 000 km /s		2

Question number			Answer	Accept	Reject	Marks
6	(c)		183 (m);			1
	(d)		Any three of: MP1 Electrons move OR there is a current Or negative charge moves; MP2 (Discharge) to earth OR across cloud OR to named object – tree, house, lightning conductor; MP3 Air conducts; MP4 Phenomenon e.g. thunder clap / lightning;	Sparks generate radio waves; Lightning causes (radio) interference; Correct reference to electrostatic attraction / repulsion ;		3
					Total	**11**