

Practice test mark scheme Foundation

Q		Expected answers	Marks	Additional guidance
1	a	gamma X-ray ultraviolet – – microwave –	3	all 4 correct = 3 marks 2 or 3 correct = 2 marks 1 correct = 1 mark
	b	radio	1	
		visible light	1	
		infrared	1	
			6	
2	a i	B	1	
	a ii	D	1	
	b	shows one complete cycle i.e. 5 lines	1	
	c	longitudinal	1	
			4	
3	a	wave speed	1	
	b	using speed = frequency × wavelength	1	
		$2 \times 4 = 8$	1	
		m/s	1	
			4	
4	a i	spectrum	1	any 2
	a ii	different speeds in glass	1	
		different wavelengths in glass	1	
	b	<ul style="list-style-type: none"> • sound needs medium/light can travel in vacuum • different speeds/sound slower/light faster • light transverse and sound longitudinal 	2	
			5	
5		Top signal joined to amplitude modulated Middle signal joined to digital Bottom signal joined to frequency modulated		All correct for the mark.

TOTAL 20

Practice test mark scheme Higher

Q		Expected answers	Marks	Additional guidance		
1	a	wave speed	1			
	b i	0.04 Hz	1			
	b ii	using speed = frequency × wavelength $2 \times 4 = 8$ m/s	1			
			1			
			1			
			5			
2	a i	amplifier	1	accept decoder or description of function		
	a ii	regenerator	1			
	b	For analogue signals, noise is amplified with signal. For digital signals, device B removes the noise. For digital signals, noise is amplified with signal.	1			
			1			
			1			
	c	B C	1			
			1			
			7			
3	a i	<ul style="list-style-type: none"> • sound needs medium/light can travel in vacuum • different speeds/sound slower/light faster • light transverse and sound longitudinal 	2	any two must include correct units		
			a ii		diffraction interference	1
						1
	a iii	300 000 km/s or 300 000 000 m/s	1			
	b	E is proportional to f / as E increases so does f / $E = hf$	1			
	c	Intensity depends on the energy of each photon Intensity depends on the number of photons per second emitted	1			
			1			
					8	

TOTAL 20