Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 5_ Light And Electromagnetic Spectrum

Name of the Student:_____
Max. Marks : 24 Marks **Time : 24 Minutes**

Mark Schemes

Q1.

Question number	Answer	Mark
	A black B is incorrect as no blue light shines on the object C is incorrect as no green light shines on the object D is incorrect as no red light is reflected from the object	(1) AO3

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Q2.

Question Number	Answer	Mark
	D the reflected ray and the normal **A, B** and **C** do not describe the angle of reflection	**(1)** **AO1**

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Q3.

Question Number	Answer	Mark
	C red **The only correct answer is C red** **A** is not correct because blue has a shorter wavelength than red **B** is not correct because green has a shorter wavelength than red **D** is not correct because yellow has a shorter wavelength than red	**(1)**

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Q4.

Question number	Answer	Mark
	☒ A blue Green, orange and yellow all have a lower frequency than blue	(1)

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Q5.

Question number	Answer	Additional guidance	Mark
	transverse (1) speed (1) frequency (1)	must be in correct order. allow any recognisable spelling.	**3** **AO1.1**

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Q6.

Question number	Answer	Additional guidance	Mark
	An explanation that combines application of knowledge (1 mark) and reasoning (1 mark) linking: (faces of) people are at a higher temperature than the background (1) therefore they emit more (infrared) at shorter wavelengths than background (1)	accept higher frequency / higher intensity	**(2)**

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Q7.

Question Number	Answer	Additional guidance	Mark
(i)	wavelength for object L = 84.(0) to 85(.0) (μm) (1) wavelength for object M = 93.(0) to 95.(0)(μm) (1)	estimates, so we are being generous with this	**(2)** AO 3 2a

Question Number	Answer	Additional guidance	Mark
(ii)	object L and shorter wavelength (1)		**(1)** AO 3 1a

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Q8.

	Answer	Acceptable answers	Mark
(a)	D the Universe (1)		**(1)**
(b)	(nebula) main sequence (star) (1) AND red giant white dwarf (1) All three in correct order for 2 marks	Red Giant White Dwarf (Main sequence) (1)	**(2)**
(c)i	infrared (radiation)/(rays) (1)		**(1)**
(c)ii	An explanation linking any two from • above the clouds / no clouds/ no weather (1) • image is clearer/more detailed/ not distorted/not blurred (1) • no light pollution (1) • (some) telescopes use gamma/ X-rays/ultraviolet /infrared/microwaves (1) • no absorption (by atmosphere) of gamma/ Xrays/ ultraviolet /infrared/ microwaves (1)	Credit to be given for stating that all telescopes would be better in space, but size and weight may exclude e.g. Jodrell Bank from space. no air/dust/pollution wider field of view/ can use anytime IGNORE 'see further' IGNORE 'it is closer (to the stars/planets)' IGNORE: references to improving understanding / knowledge of space	**(2)**

		Indicative Content	Mark
QWC	***(d)**	A description including some of the following points • improved QUALITY eg higher or better magnification/ detail/resolution or clearer/brighter image **OR** MORE INFORMATION (than with naked eye) of image/data eg new planets/stars/nebula e/pulsars (This could	**(6)** **Exp**

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		be extra detail for greater magnification/resolution only) • detection of (non-visible) electromagnetic WAVES eg Xray / UV / IR/ radio • TECHNOLOGY that enable collection of more data eg reflecting telescope/arrays ***and/or*** additions eg computer-aided /photographic connections or larger (objective) lens/mirror • POSITION of telescopes – eg orbital/outside atmosphere/on top of mountains/away from atmosphere/rays not absorbed/obscured/scattered by atmosphere. Ignore 'Hubble' or 'Compton'.	
Level	**0**	No rewardable content	
1	**1 - 2**	• a limited description e.g. mention of any one example such as "magnifies stars/planets" OR "discovering new planets/stars" • the answer communicates ideas using simple language and uses limited scientific terminology • spelling, punctuation and grammar are used with limited accuracy	
2	**3 - 4**	• a simple description e.g. mention of either two of the improvements **OR** extra detail about one of the improvements eg improvement **plus** example (ie Magnifies planets *so that craters/mountains may be seen)* • the answer communicates ideas showing some evidence of clarity and organisation and uses scientific terminology appropriately • spelling, punctuation and grammar are used with some accuracy	
3	**5 - 6**	• a detailed description e.g. mention of	

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		three (or more) improvements **OR** two improvements **plus extra detail about one of them (ie Telescopes in space can detect XRays *that would be absorbed by the atmosphere*)** • the answer communicates ideas clearly and coherently uses a range of scientific terminology accurately • spelling, punctuation and grammar are used with few errors

(Suitable extra detail shown in italics in examples above)

Total for Question = 12 marks

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