Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic : 7_ Astronomy

Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Mark
	Answers will be credited according to candidate's deployment of knowledge and understanding of the material in relation to the qualities and skills outlined in the generic mark scheme. The indicative content below is not prescriptive, and candidates are not required to include all the material which is indicated as relevant. Additional content included in the response must be scientific and relevant. **AO1 strand 1 (6)** • idea that telescopic evidence supported the heliocentric model e.g. observing the moons of Jupiter supported a sun-centred solar system • detail e.g. it was Galileo's observations of the moons of Jupiter • the moons rotate around Jupiter i.e. not everything rotates about the earth • other observations by telescope – discoveries of the planets Uranus and Neptune + the asteroid belt • (detailed) photographic evidence • use of computer modelling • satellite observations • heliocentric model verified by Voyager missions (space probes)	**(6)** AO 1 1

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Level	Mark	Descriptor
	0	• No rewardable material.
Level 1	1-2	• Demonstrates elements of physics understanding, some of which is inaccurate. Understanding of scientific ideas lacks detail. (AO1) • Presents an explanation with some structure and coherence. (AO1)
Level 2	3-4	• Demonstrates physics understanding, which is mostly relevant but may include some inaccuracies. Understanding of scientific ideas is not fully detailed and/or developed. (AO1) • Presents an explanation that has a structure which is mostly clear, coherent and logical. (AO1)
Level 3	5-6	• Demonstrates accurate and relevant physics understanding throughout. Understanding of the scientific ideas is detailed and fully developed. (AO1) • Presents an explanation that has a well-developed structure which is clear, coherent and logical. (AO1)

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Q2.

	Answer	Additional guidance	Mark
(i)	**B** red giant (1)		**(1)** **AO1**

Question Number	Answer	Mark
(ii)	**D** black hole	**(1)** **AO1**

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Q3.

Question number	Answer	Additional guidance	Mark
	An explanation that combines identification – understanding (1 mark) and reasoning/justification – understanding (2 marks): • both theories predict an expanding universe and the Big Bang theory also predicts that the universe had a beginning (1) • the red shift theory indicates that the universe is expanding so supports both theories (1) • whereas CMB also indicates that the universe had a beginning, so supports Big Bang theory (1)	provided evidence that the steady state theory was incorrect	**(3)**

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Q4.

Question number	Indicative content	Mark
*	Answers will be credited according to candidate's deployment of knowledge and understanding of the material in relation to the qualities and skills outlined in the generic mark scheme. The indicative content below is not prescriptive and candidates are not required to include all the material which is indicated as relevant. Additional content included in the response must be scientific and relevant. May be shown in a diagram. Objects • fixed stars are not part of solar system • additional planets are in solar system • these include Neptune and Uranus • asteroids / minor planets / comets are in solar system • planets have their own moons • the Sun is a star and is very much larger than the planets Arrangement of objects in Solar System • Earth not at the centre • Sun is in the centre • Earth between Venus and Mars • Moon (still) orbits Earth. • planets orbit the Sun. • asteroids / comets orbit Sun • orbits are not circular • (relative) distance between planets and Sun much larger • stars are very large distance from Solar System.	**6** **AO1.1** **AO3.1**

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Level	Mark	Descriptor
	0	• No rewardable material.
Level 1	1-2	• Demonstrates elements of physics understanding, some of which is inaccurate. Understanding of scientific ideas lacks detail. (AO1) • Presents an explanation with some structure and coherence. (AO1)
Level 2	3-4	• Demonstrates physics understanding, which is mostly relevant but may include some inaccuracies. Understanding of scientific ideas is not fully detailed and/or developed. (AO1)
		• Presents an explanation that has a structure which is mostly clear, coherent and logical. (AO1)
Level 3	5-6	• Demonstrates accurate and relevant physics understanding throughout. Understanding of the scientific ideas is detailed and fully developed. (AO1) • Presents an explanation that has a well-developed structure which is clear, coherent and logical. (AO1)

Level	**Mark**	**Additional Guidance**	**General additional guidance – the decision within levels** e.g. - At each level, as well as content, the scientific coherency of what is stated will help place the answer at the top, or the bottom, of that level.
	0	No rewardable material.	
Level 1	1–2	Additional guidance Facts about either objects or arrangement	Possible candidate responses The Earth is not at the centre. There are additional planets
Level 2	3–4	Additional guidance Partially complete comparison of objects and arrangement	Possible candidate responses Earth is a planet. Neptune is another planet. All the planets orbit the Sun.
Level 3	5–6	Additional guidance Detailed comparison of objects and arrangement	Possible candidate responses All the planets including the Earth go round the Sun. The moon goes round the Earth. The stars are a long way from the Solar System and are not part of it.

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