

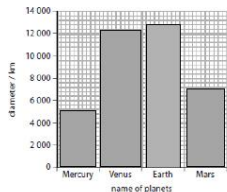
Name of the Student: _____

Max. Marks : 20 Marks

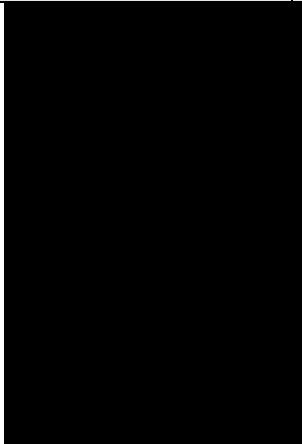
Time : 20 Minutes

Mark Schemes

Q1.

	Answer	Acceptable answers	Mark
(i)	 <p>Mercury 4 900 km Venus 12 100 km Mars 6 800 km Three correct (2) One or two correct (1) + or – one square Judge by eye</p>		(2)
(ii)	<p>Correct information from table 1.52 (1) Conversion to kilometres $(1.52) \times 150\,000\,000$ (1)</p>	<p>Seen anywhere in the answer Incorrect information shown to be used correctly (1) Correct answer, no working scores full marks $228\,000\,000 / 2.28 \times 10^8$ (km) 228 to any power of 10, allow 1 mark if no other mark awarded. $225\,000\,000 / 2.25 \times 10^8$ (km), allow max 1 mark if no working shown.</p>	(2)

Q2.

	Answer	Acceptable answers	Mark
(i)	 <p>Mercury 4 900 km Venus 12 100 km Mars 6 800 km Three correct (2) One or two correct (1) + or – one square Judge by eye</p>		(2)
(ii)	<p>Correct information from table 1.52 (1) Conversion to kilometres (1.52) × 150 000 000 (1)</p>	<p>Seen anywhere in the answer Incorrect information shown to be used correctly (1) Correct answer, no working scores full marks 228 000 000 / 2.28×10^8 (km) 228 to any power of 10, allow 1 mark if no other mark awarded. 225 000 000 / 2.25×10^8 (km), allow max 1 mark if no working shown.</p>	(2)

Q3.

		Indicative Content	Mark
		<p>A description including some of the following points</p> <ul style="list-style-type: none"> • improved QUALITY eg higher or better magnification/ detail/resolution or clearer/brighter image <p>OR MORE INFORMATION (than with naked eye) of image/data eg new planets/stars/nebula e/pulsars (This could be extra detail for greater magnification/resolution only)</p> <ul style="list-style-type: none"> • 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'. 	(6) Exp
Level	0	No rewardable content	
1	1 - 2	<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • spelling, punctuation and grammar are used with limited accuracy
2	3 - 4	<ul style="list-style-type: none"> • 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 <i>so that craters/mountains may be seen</i>) • 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	<ul style="list-style-type: none"> • a detailed description e.g. mention of three (or more) improvements OR two improvements plus extra detail about one of them (ie Telescopes in space can detect X Rays 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)

Q4.

	Answer	Acceptable answers	Mark
(i)	Milky Way	Accept any spelling	(1)
(ii)	<input checked="" type="checkbox"/> D white dwarf		(1)

Question Number	Answer	Additional guidance	Mark
(i)	<p>examples:</p> <p>planets have moons (1)</p> <p>the Earth rotates (spins) (1)</p> <p>planets orbit the Sun (1)</p> <p>Pluto is no longer a planet (1)</p> <p>orbits are elliptical (not circular) (1)</p> <p>there are more planets than previously thought (1)</p> <p>ours is not the only solar system (1)</p> <p>Earth is {round/spherical/not flat} (1)</p> <p>planets are not wandering stars.</p>	answers must be to do with the solar system	(1)

Question Number:	Answer	Additional guidance	Mark
(ii)	<p>smooth curve drawn on the graph (1)</p> <p>horizontal line drawn from 4.6 Earth years to intercept the drawn line/curve (1)</p> <p>EITHER:</p> <p>their reading from line / curve (1)</p> <p>OR</p> <p>430 ± 30 (million km) (1)</p>	<p>accept curve up to Mars followed by a straight line</p> <p>plot point at year length = 4.6</p> <p>reading on distance axis \pm half small square from their graph</p> <p>award full marks for the correct answer without working</p>	(3)