

MARK SCHEME

GCSE

PHYSICS

AQA - TRIPLE SCIENCE

P8 - TEST 1

SPACE PHYSICS

Beginner

Mark schemes

- 1.** (a) Milky Way 1
- (b) distance = 300 000 × 500 1
- d = 150 000 000 (km) 1
- an answer of 150 000 000 scores 2 marks*
- (c) 3 1
- (d) accept any number greater than 1.0 and less than 12.0 1
- (e) $\frac{9}{0.6}$ 1
- 15 1
- an answer of 15 scores 2 marks*
- [7]**
- 2.** (a) dwarf planet 1
- (b) nebula 1
- correct order only*
- gravity 1
- (c) (becomes a) red giant 1
- (d) the greater the distance (from the Sun) the greater the time taken to orbit the Sun 1
- (e) any value between 3 and 7 inclusive 1

(f) because some planets do not fit the pattern

1

named planet that does not fit pattern

eg Venus

1

reason why named planet does not fit pattern

its temperature is higher than expected

or

Uranus: its temperature is lower than expected

or

Neptune: its temperature is higher than expected

or

Mercury: its temperature is lower than expected

1

[9]

3.

(a) any **one** from:

- Earth is at the centre (not the Sun)
- there are fewer planets

accept there is no asteroid belt shown

accept there are only 5 planets (and not 8)

accept other planets have no moons shown

1

(b) Shows the moon in orbit around the Earth

accept the planets have circular orbits

1

(c) circular

accept elliptical

1

(d) gravity

1

(e) Mira is much more massive

1

[5]

- 4.** (a) gas *correct order only* 1
- gravity 1
- protostar
accept correct word circled in box provided no answer given in answer space 1
- (b) the explosion of a massive star 1
- (c) The telescopes and measuring instruments were not sensitive enough. 1
- [5]**

- 5.** (a) (enough) dust / gas (from space) 1
- are pulled together 1
- by gravitational attraction 1
- (b) fusion
accept fusion circled in box 1
- (c) forces within it are balanced 1
- (d)
- ```

graph TD
 A[red giant] --> B[white dwarf]
 B --> C[black dwarf]

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- correct order only* 1
- ignore reference to planetary nebula* 1
- 1
- [8]**

- 6.** (a) dust *accept 'solid (s)'* 1
- space *accept 'from supernova / supernovum / supernovas'* 1
- (b) By atoms joining together *only one ticked or otherwise unambiguously identified* 1
- (c) Milky Way (galaxy) 1
- (d) The answer depends on beliefs and opinions, not scientific evidence. *only one ticked or otherwise unambiguously identified* 1
- [5]**

- 7.** (a) (i) red shift *accept Doppler effect* 1
- (ii) the universe is expanding 1
- (b) (i) big bang 1
- (ii) at the moment it is the best way of explaining..... 1
- [4]**

- 8.** giant 1
- supernova 1
- neutron 1
- [3]**