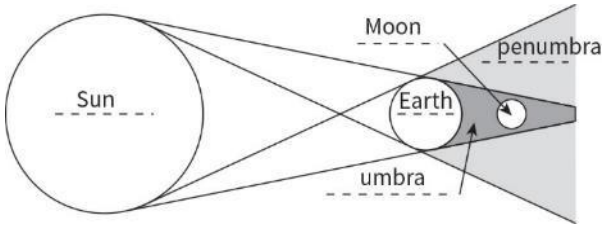
# KS3 Physics

Answers

## Chapter 4 – Space

| Question | Answers | Extra information | Mark |
|---|---|---|---|
| **1(a)** | the Moon, Venus, Jupiter | All three needed for the mark | 1 |
| **(b)** | moon – natural object in orbit around a planet<br>solar system – collection of planets and moons in orbit around a star<br>galaxy – collection of stars and solar systems<br>Universe – all the galaxies, stars, moons, and other celestial objects | 2 marks for two correctly matched<br>1 mark for one correctly matched | 3 |
| **2(a)** | B | | 1 |
| **(b)** | the axis of Earth is tilted towards the Sun<br>the Sun is in the sky for longer during the day | | 1<br>1 |
| **3(a)** |  | 1 mark for each correct label | 5 |
| **(b)** | lunar | | 1 |
| **4** | Mercury<br>Mars<br>Jupiter<br>Mars<br>Sun | | 1<br>1<br>1<br>1<br>1 |
| **5** | orbits Earth – no letters<br>intersection between orbits Earth and does not give out light – B, E<br>does not give out light – A, C, D | | 1<br>1<br>1 |
| **6(a)** | inner planets are rocky<br>outer planets are gaseous/icy | | 1<br>1 |

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| **(b)** | the force of gravity | | 1 |
| **7(a)** | Any **two** from:<br>• type of lamp<br>• depth of sand<br>• distance of lamp from sand | | 2 |
| **(b)** | it will be higher<br>the rays are concentrated over a smaller area/energy is transferred to less sand (than tray B) | | 1<br>1 |
| **(c)** | Earth's axis is tilted<br>so the surface tilts towards then away from the Sun | | 1<br>1 |
| **8(a)** | it is the distance that light travels in a particular time/equal to time × speed | | 1 |
| **(b)** | ratio of the light-time to the Sun and the Moon = (8 × 60 s) : 1.4 s<br>= 343 : 1<br>time it would take = 3 days × 343<br>= 1029 days<br>$= \frac{1029}{365} = \frac{2.8\,(\text{years})}{3\,(\text{years})}$ | | 1<br>1<br>1<br>1<br>1 |
| **9** | yes<br>phases of the Moon seen when the Moon orbits Earth<br>one half of the Moon is lit at all times<br>one half of Earth is lit at all times<br>Earth moves around the Sun so its appearance changes | No mark for yes/no with no reasoning | <br>1<br>1<br>1<br>1 |
| | **SPACED LEARNING QUESTIONS** | | |
| **10(a)** | rays traced back<br>to cross at a point | | 1<br>1 |
| **(b)** | you have to look in the glass to see it | | 1 |

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| **(c)** | glass reflects light to form an image<br>glass transmits light to enable you to see what is behind it | | 1<br>1 |

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