THE ANSWER SERIES
# NATURAL SCIENCES VIDEOS

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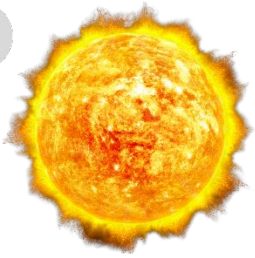
## THE SOLAR SYSTEM REVISION QUESTION

The pictures **A** to **F** show some planets and other objects that occur within our solar system.
Note: the pictures are not drawn to scale.

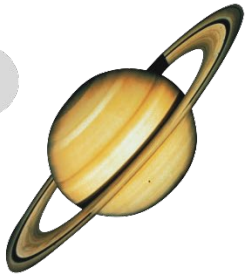
A 

B 

C 

D 

E 

F 

1. Give only the LETTER(S) of the picture(s) that shows/show:
   a. a star (1)
   b. a terrestrial planet (1)
   c. Earth (1)
2. Give THREE ways in which you would distinguish between a *star* and a *planet*. (3)
3. Identify the planet shown in **A** and give ONE visible reason for your answer. (2)
4. The planet in **F** can be identified as Saturn.
   a. Give ONE visible reason for this identification. (1)
   b. Provide any TWO other characteristics of Saturn. (2)
5. Picture **B** shows a natural satellite.
   a. Give an alternative, more common name, for a natural satellite. (1)
   b. How many natural satellites does Mercury have compared to the planet in **A**? (2)
6. Picture **E** shows an asteroid.
   a. Name ONE place in our solar system where asteroids occur. (1)
   b. Explain how asteroids relate to meteoroids. (3)
   c. Explain why a meteor is often mistakenly called a 'falling/shooting star.' (3)

*VIDEO: GR 8 THE SOLAR SYSTEM – Worked question on topic content #5*

7. Give only the NAME of the:
   a. hottest planet in our solar system (1)
   b. coldest planet in our solar system (1)

8. Provide TWO sources of comets that occur in our solar system. (2)

9. Explain how the earth's average temperature makes it the only planet in our solar system that can support life. (4)

**MEMORANDUM**

1. (a) C✓ (b) D✓ (c) D✓ (3)

2. – stars twinkle; planets shine with a fixed glow✓
   – stars emit their own light; planets only reflect light (do not emit their own light)✓
   – stars are larger than planets✓
   – stars keep their positions in the night sky; planets change their positions/move✓ (any 3)

3. Jupiter✓ – the large red dot on the planet's surface✓/ the 'Eye of Jupiter' a giant hurricane is visible on its surface (2)

4. (a) the clear rings✓around the planet (1)

   (b) – second largest planet✓
   – gas giant✓
   – 62 moons✓
   – can float in water / has a lower density than water / lightest planet✓
   – average temperature of –140°C✓
   – 1 day = 10 Earth hours ✓
   – 1 year = 29 Earth years✓ (any 2)

5. (a) moon✓ (1)

   (b) Mercury has no moons✓ whereas Jupiter (planet A) has 79 moons✓ (2)

6. (a) the asteroid belt✓ (1)

   (b) – When asteroids collide✓ inside the asteroid belt
   – smaller pieces can break off and move out of the asteroid belt✓
   – These free-floating space rocks✓ are smaller than asteroids
   – and are called meteoroids✓
   – Asteroids are therefore a source of / give rise to meteoroids ✓ (any 3)

   (c) – A meteor is a space rock that enters a planet's atmosphere✓
   – Friction between the meteor and gases in the planet's atmosphere cause it to burn up✓
   – The burning action is visible as a long, white streak behind the meteor✓
   – that disappears quickly creating the impression of a star shooting/falling out of space✓ (any 3)

7. (a) Venus✓ (b) Neptune✓ (2)

8. – Kuiper belt✓
   – Oort cloud✓ (2)

9. – The earth has an average temperature of 16°C✓
   – which is not too hot and not too cold✓ / just the right temperature
   – for water to appear in a gas, liquid and solid state✓ on the planet
   – Living things need liquid water to survive✓
   – If the earth were too hot, like the other terrestrial planets, all the water would evaporate✓
   – If the earth were too cold, like the gas giants, all the water would be frozen and inaccessible to life✓ (any 4)