

Questions are for separate science students only**Q1.**

The Universe contains many stars. **(Physics only)**

- (a) The Sun is the star at the centre of our solar system.

Give **three** other types of object that form our solar system.

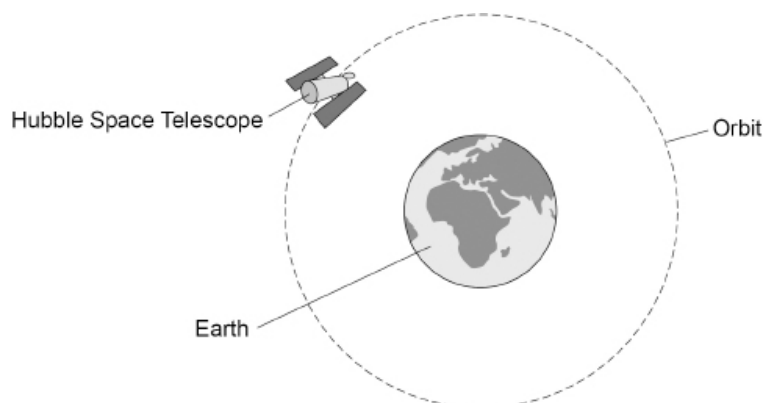
1 _____

2 _____

3 _____

(3)

(Total 3 marks)

Q2.**Figure 1** shows the Hubble Space Telescope orbiting the Earth. **(Physics only)****Figure 1**

- (a) What name is given to objects that orbit a planet?

(1)

- (b) A space telescope uses microwaves to communicate with the Earth.

A microwave has a wavelength of 12.5 cm.

The speed of microwaves through space is 3.0×10^8 m/s.

Calculate the frequency of the microwave.

Use the Physics Equations Sheet.

Give your answer in standard form.

Frequency (in standard form) = _____ Hz

(5)

- (c) Explain the effect of the Earth's gravitational force on the motion of the Hubble Space Telescope. **(HT only)**

(3)

(Total 9 marks)

Q3.

Galaxies contain billions of stars. **(Physics only)**

- (a) Compare the formation and life cycles of stars with a similar mass to the Sun to stars with a much greater mass than the Sun.

(6)

(Total 6 marks)