

Name of the Student: _____

Max. Marks : 13 Marks

Time : 13 Minutes

Q1.

- (i) The chart shows the electromagnetic (EM) spectrum.
Some parts of the spectrum have been labelled.

radio	P	Q	visible light	R	S	gamma rays
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State the name of part **Q**.

(1)

-
(ii) Three telescopes using different parts of the spectrum have been added to the chart.

radio	P	Q	visible light	R	S	gamma rays
Jodrell Bank			Hubble			Compton

Jodrell Bank is located near Manchester, whereas Hubble and Compton are in space.

Explain why some telescopes are located outside the Earth's atmosphere.

(2)

.....
.....

Q2.

The Sun is a star that is in a stable state called the main sequence.

The Sun, in its main sequence, radiates energy continuously but stays the same size.

(i) State the energy source in the Sun.

(1)

.....

(ii) Name the force that prevents the Sun from expanding.

(1)

.....

(Total for question = 2 marks)

Q3.

During the twentieth century red-shift and CMB radiation were discovered. They have provided scientists with data to test theories of the origin of the Universe. Stars have different stages in their evolution.

(i) Which of these gives the next stages in the evolution of the Sun?

Put a cross () in the box next to your answer.

(1)

- A** white dwarf then black hole
- B** neutron star then white dwarf
- C** red giant then supernova
- D** red giant then white dwarf

(ii) Modern telescopes can provide us with more data than the telescopes used 100 years ago.

Explain what additional data can be collected and processed using modern telescopes.

(2)

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.....

.....

Q4.

Figure 2 shows part of the circular orbit of a planet around the Sun.

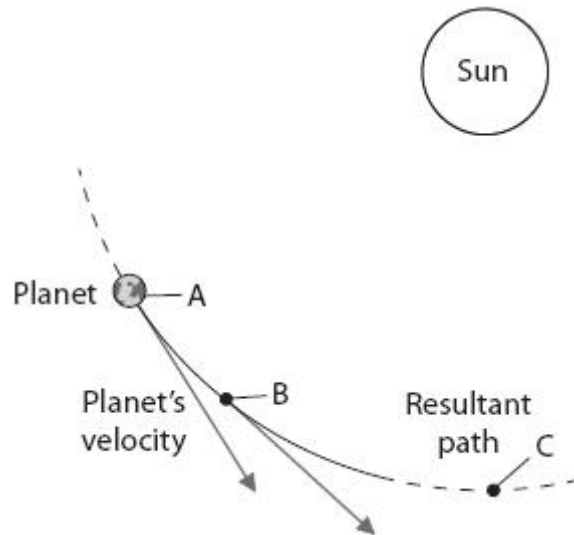


Figure 2

(i) Give the name of the force that keeps the planet moving in a circular orbit.

(1)

.....

(ii) The direction of the velocity of the planet at points A and B is shown by the arrowed lines.

Add an arrowed line to the diagram to show the direction of the velocity at C.

(1)

(Total for question = 2 marks)

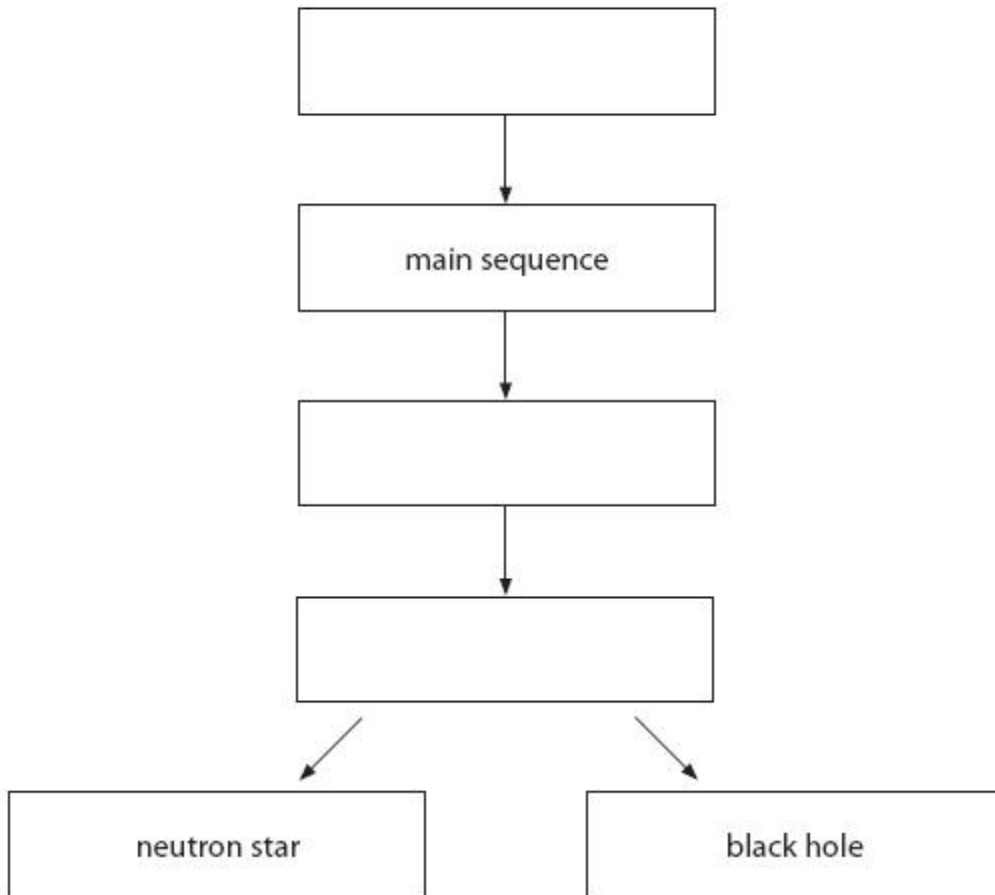
Q5.

Stars that have a mass much larger than that of the Sun have a different life cycle.

Choose words from the box to complete the life cycle of a massive star.

(3)

black dwarf	galaxy	nebula	red dwarf
red super giant	supernova	white dwarf	



(Total for question = 3 marks)