

1. Complete the following sentences by choosing the correct words from the box. Each word may be used once or not at all.

<b>dwarf</b>	<b>giant</b>	<b>neutron</b>	<b>proton</b>	<b>supernova</b>
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If a red .....star is large enough, it may eventually blow  
up in an explosion called a ....., leaving behind a very  
dense ..... star.

**(Total 3 marks)**

2. Stars do not stay the same forever.

- (a) Over billions of years the amount of hydrogen in a star decreases. Why?

.....  
.....

**(1)**

- (b) Describe how a massive star (at least five times bigger than the Sun) will change at the end of the main stable period.

*To gain full marks in this question you should write your ideas in good English. Put them into a sensible order and use the correct scientific words.*

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.....

**(4)**

(c) The inner planets of the solar system contain atoms of the heaviest elements.

(i) Where did these atoms come from?

.....  
.....

(1)

(ii) What does this tell us about the age of the solar system compared with many of the stars in the Universe?

.....

(1)

(Total 7 marks)

3. *To gain full marks in this question you should write your ideas in good English. Put them into a sensible order and use the correct scientific words.*

(a) The Sun is at the stable stage of its life.

Explain, in terms of the forces acting on the Sun, what this means.

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(3)

(b) At the end of the stable stage of its life a star will change.

Describe and explain the changes that could take place, for a star:

(i) to become a white dwarf;

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.....  
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.....  
.....

(3)

(ii) to become a black hole.

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(3)

(Total 9 marks)

4. Stars are formed from massive clouds of dust and gases in space.

(a) What force pulls the clouds of dust and gas together to form stars?

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(1)

(b) Once formed a star can have a stable life for billions of years. Describe the **two** main forces at work in the star during this period of stability.

.....  
.....

(2)

(c) What happens to this star once this stable period is over?

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.....  
.....  
.....

(4)

(d) Suggest what might then happen to a planet close to this star.

.....  
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(1)

(Total 8 marks)