

Name of the Student: _____

Max. Marks : 17 Marks

Time : 17 Minutes

Q1.

Our Sun is just one of many millions of stars in a galaxy called the Milky Way.

Our Sun is in the main stable period of a star's lifetime. The massive force of gravity draws its matter together. This force is balanced by the very high temperatures, from the fusion of hydrogen atoms, which tend to make the Sun expand. Describe and explain what will happen to the Sun as the hydrogen is eventually used up.

(Total 3 marks)

Q2.

Studies of light from distant galaxies have provided evidence for the theory that the Universe started from one place and is expanding. Explain how.

(Total 3 marks)

Q3.

Studying stars gives scientists evidence about the evolution of the Universe.

(a) (i) In astronomy, what is meant by a black hole?

(2)

(ii) How is it possible to detect a black hole?

(2)

(b) The changes which happen in stars result in new elements being formed.

Nuclei of the heaviest elements are found in the Sun.

Describe how these nuclei are formed.

(2)

(Total 6 marks)

Q4.

One theory of the origin of the Universe was that billions of years ago all matter was in one place, then it exploded ('big bang').

Describe, in as much detail as you can, how our star (the Sun) formed from the time when there was just dust and gas (mostly hydrogen) up to now when it is in its 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.

(Total 5 marks)