STAR CYCLE AND GALAXY

Q1. (a) Choose the best words from the box to complete the following sentences.

billions	**fission**	**friction**	**fusion**	**gases**
gravity	**liquids**	**millions**	**thousands**	

(a)(i) Stars form when enough dust and _____ from space are pulled together by _____

(2 marks)

(a)(ii) Stars are able to give out energy for millions of years by the process of _____

(1 marks)

(a)(iii) The Sun is one of many _____ of stars in our galaxy.

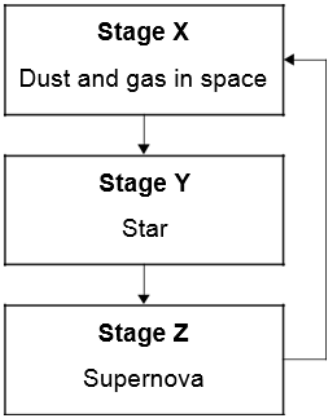
(1 marks)

(b) What is the name of our galaxy?

_____

(1 marks)

Q2 .The flowchart shows a simple version of the life cycle of a star that is much more massive than the Sun.



(a) What causes the change from Stage X to Stage Y?

_____

(1 mark)

(b) For most of its time in Stage Y, the star is stable.

Explain why the star remains stable.

_____

_____

_____

(2 marks)

(c) (i) Explain how a star is able to produce energy in Stage Y.

_____

_____

_____

(2 marks)

(c) (ii) Why is a star in Stage Y able to give out energy for millions of years?

_____

(1 mark)

(d) What happens to the elements produced in a supernova?

_____

_____

(1 mark)

Q3. (a) Complete the two spaces in the sentence.

Stars form when enough _____ and gas from _____ are pulled together by gravitational attraction

(2 marks)

(b) How are stars able to give out energy for millions of years?

Put a tick (✓) in the box next to the answer.

By atoms joining together ☐

By atoms splitting apart ☐

By burning gases ☐

(c) There are many billions of stars in our galaxy. Our Sun is one of these stars. What is the name of our galaxy?

_____

(1 mark)

(**d)**

Why was the Universe created?

We cannot expect scientists to answer this question. What is the reason for this?

Put a tick (✓) in the box next to the answer.

It will take too long to collect the scientific evidence. ☐

The answer depends on beliefs and opinions, not scientific evidence. ☐

There is not enough scientific evidence. ☐

(1 mark)

Q4. This passage is from a science magazine.

> A star forms when enough dust and gas are pulled together. Masses smaller than a star may also be formed when dust and gas are pulled together.

(a) What is the force which pulls the dust and gas together?

_____

(1 mark)

(b) Complete the sentences.

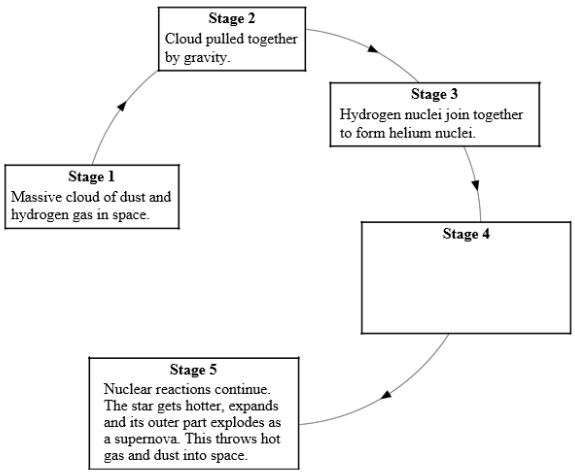
(b)(i) The smaller masses may be attracted by the star and become _____

(b)(ii) Our nearest star, the Sun, is stable because the gravitational forces and the radiation pressure are _____

(b)(iii) The Sun is one of billions of stars in the galaxy called the _____

(3 marks)

Q5. The diagram shows part of the life cycle of a star which is much bigger than the Sun.



(a) (i) What is the relationship between the masses of the dust and gas in the cloud in Stage 2 and the force of gravity between them?

_____

_____

_____

(1 mark)

(a) (ii) What is the relationship between the distance apart of the dust and gas in the cloud in Stage 2 and the force of gravity between them?

_____

_____

(1 mark)

(b) In Stage 3 the star remains stable for millions of years. Explain why.

(2 marks)

(c) What happens in Stage 4?

(2 marks)

Total 27 marks