

Stars & galaxies

Name & Set

1 (i) Explain how stars form from large gas clouds. Illustrate your answer with a diagram.

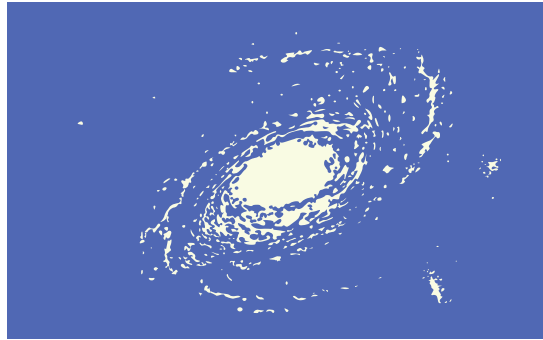
_____ [3]
(ii) Use words from the following list to show the steps in the Sun's likely evolution

neutron star	red giant	supernova	white dwarf
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_____ [3]
(iii) Name and explain the process by which energy is produced in the core of the Sun.

2 (a) What is the spiral object shown in the picture below?

_____ [1]



(b) What is it made of?

_____ [2]

(c) What is known about the relative motion between distant galaxies?

_____ [3]

(d) What conclusion have astronomers drawn from their measurements of the relative motion between galaxies?

_____ [3]

3 Our nearest star is the Sun. This is just one ,of millions of stars which make up our galaxy. Beyond our galaxy are millions of other galaxies. The nearest of these is the Andromeda Nebula. This galaxy is about 2.5 million light years away from us. (1 light year $\approx 9 \times 10^{12}$ km)

(a) Apart from differences in size and material, give two ways in which a star is different from a planet.

1. _____
_____ [1]

2. _____
_____ [1]

(b) What is the name of our galaxy? _____ [1]

(c) (i) What is a light year?

_____ [1]

(ii) Calculate the approximate distance from us to the Andromeda Nebula.

_____ [3]

(c) The Big Bang theory attempts to explain the origin of the Universe.
(i) What is the Big Bang theory?

_____ [3]

(ii) What can be predicted from the Big Bang theory about the size of the Universe?

_____ [3]

(d) (i) Explain how stars like the Sun were formed.

_____ [3]

(ii) The Sun is made mostly of hydrogen. Eventually the hydrogen will be used up and the Sun will "die".

Describe what will happen to the Sun from the time the hydrogen is used up until the Sun "dies".

[3]