Soalan Subjektif

11.1 Bintang dan Galaksi dalam Alam Semesta
Stars and Galaxies in the Universe

Buku Teks: m.s. 240 – 247

1. Rajah 1 menunjukkan tiga jenis galaksi.
Diagram 1 shows three types of galaxies.



A | B | C

Rajah 1 / *Diagram 1*

(a) Namakan jenis galaksi *A*, *B* dan *C* dalam rajah di atas. TP 1
Name the type of galaxies A, B and C in the diagrams above.

(b) Berikan dua contoh bagi setiap galaksi. TP 1
Give two examples for each galaxy.

A: (i) _____ *C*: (i) _____

(ii) _____ (ii) _____

B: (i) _____

(ii) _____

(c) Berikan tiga ciri-ciri galaksi Bima Sakti. TP 1
Give three characteristics of the Milky Way.

- Consist of 200 _____ stars including the Sun
- An average size _____ galaxy
- Has diameter of 120,000 _____ years.

light | spiral | billion

2. Padankan istilah di bawah dengan jawapan yang betul. TP 2
Match the terms below with the correct answers.

(a) Galaksi *Galaxy*	(i) Terbentuk selepas letupan supernova yang membabitkan bintang super besar. *Formed after the supernova explosion when it involves a superlarge star.*
(b) Nebula *Nebula*	(ii) Galaksi berpilin yang mempunyai diameter kira-kira 120 000 tahun cahaya. *A spiral galaxy that has a diameter of about 120 000 light years.*
(c) Bima Sakti *The Milky Way*	(iii) Letupan besar yang berlaku kepada bintang raksasa merah. *A big explosion that happens to the red supergiant.*
(d) Bintang neutron *Neutron star*	(iv) Himpunan jutaan bintang, gas dan habuk. *A collection of millions of stars, gasses and dust.*
(e) Supernova *Supernova*	(v) Awan besar yang mengandungi debu, plasma, helium dan hidrogen. *A big cloud that contains dust, plasma, helium and hydrogen.*
(f) Lohong hitam *Black hole*	(vi) Terbentuk selepas letupan supernova yang melibatkan bintang besar. *Formed after the supernova explosion that involves a large star.*

3. Nyatakan sama ada pernyataan berikut **BENAR** atau **PALSU**. TP 2
*State whether the statements below are **TRUE** or **FALSE**.*

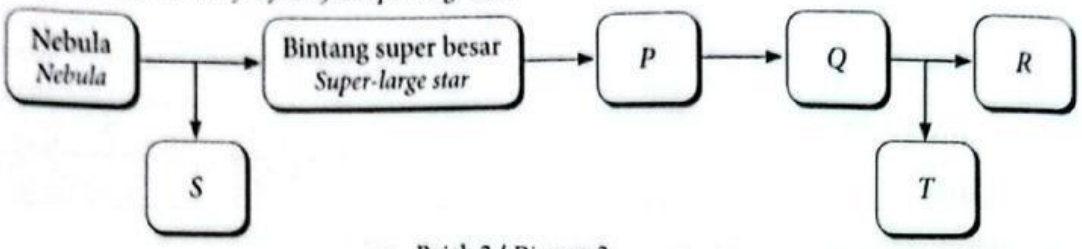
(a) Matahari bergerak mengelilingi titik tengah galaksi Bima Sakti. _____
The Sun is circling the center of the Milky Way.

(b) Apabila dilihat daripada Bumi, bintang kelihatan terang kerana memantulkan cahaya daripada Matahari. _____
When observe from the Earth, a star looks bright because it reflects light from the Sun.

(c) Terdapat sembilan buah planet di dalam sistem suria kita. _____
There are nine planets in our solar system.

(d) Kecerahan sesuatu bintang bergantung pada saiz dan jaraknya daripada Matahari. _____
The brightness of a star depends on its size and distance from the Sun.

4. Rajah 2 menunjukkan kitar hidup sebuah bintang super besar.
Diagram 2 shows the life cycle of a super-large star.



Rajah 2 / *Diagram 2*

(a) Namakan *P*, *Q* dan *R*. TP 1
Name P, Q and R.

P: _____ *Q*: _____ *R*: _____

(b) Huraikan proses yang terjadi di *S*. TP 2
Explain the process that takes place in S.

Gases and dust particles in the [ ] are pulled by a gravitational force to become [ ], contract and finally turns into a solid core. When the temperature and pressure in the core become too high, nuclear fusion happends and produces [ ] and light. A protostar is finally born from this process. This star continues to [ ] to become a super-large star.

heat | denser | grow | nebula

(c) Apakah yang berlaku di *T*? TP 2
What happens at T?

A [ ] happens which is a massive [ ] that destroys a [ ]

explosion | star | supernova

(d) Berbanding peringkat lain, bintang super besar berada dalam keadaan stabil. Jelaskan jawapan anda. TP 4
Compared to others, super-large star is stable. Explain the reason. KBAT Menganalisis

The [ ] force and pressure in the [ ] star is in balance. It also has enough hydrogen for [ ] fusion to continue to happen.

nuclear | gravitational | super-large

(e) Adakah Matahari akan melalui proses *T* pada akhirnya? Jelaskan jawapan anda. TP 4
Will the Sun undergoes process T at the end? Explain your answer. KBAT Menganalisis

_____. Because the Sun is a [ ] mass star. The Sun is too small to cause a [ ].

supernova | medium

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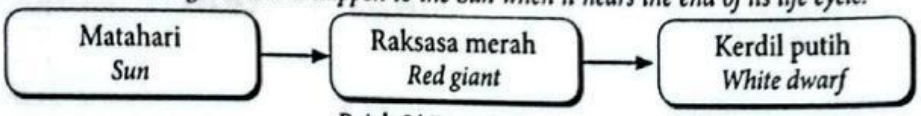
5. Rajah 3 menunjukkan perubahan yang bakal berlaku kepada Matahari dalam menuju penghujung jangka hayatnya.
Diagram 3 shows the changes that will happen to the Sun when it nears the end of its life cycle.



Rajah 3/ *Diagram 3*

(a) Apakah yang akan menyebabkan Matahari bertukar menjadi raksasa merah? TP 4
What will cause the Sun to change into the red giant?
KBAT Menganalisis

The _____ layer of the Sun will heat up when a lot of heat is generated. This cause the hydrogen in this layer starts to _____, causing the Sun to _____ and become red giant.

burn | expand | outermost

(b) Ramalkan akibatnya kepada Bumi apabila Matahari berubah menjadi raksasa merah. TP 5
Predict the consequences to the Earth when the Sun becomes a red giant.
KBAT Menilai

The Sun will grow to _____ the orbits of Mercury, Venus and perhaps even Earth. The new distance between the Earth and the Sun will become _____ This may not be _____ for living things on Earth.

closer | safe | encompass

6. Jadual 1 menunjukkan empat jenis bintang dan warnanya.
Table 1 shows four types of stars with their colours.

Jadual 1/ *Table 1*

Bintang *Stars*	Arcturus *Arcturus*	Polaris *Polaris*	Rigel *Rigel*	Betelgeuse *Betelgeuse*
Warna *Colour*	Jingga *Orange*	Kuning-putih *Yellow-white*	Biru-putih *Blue-white*	Merah *Red*

(a) Susun bintang-bintang tersebut mengikut turutan yang betul. TP 2
Arrange the following stars based on the correct arrangement.

Semakin panas / *Hotter* →

(i) | (ii) | (iii) | (iv)

(b) Pada pendapat anda, di manakah kedudukan Matahari dalam turutan tersebut? TP 4
In your opinion, where is the location of the Sun in the sequence?
KBAT Menganalisis

7. Nyatakan ciri-ciri pengelasan bintang. TP 1
State the characteristics for classifying stars.

(a) B _____
(b) D _____
(c) S _____
(d) C _____
(e) T _____

Temperature | Size | Distance from Earth | Colour | Brightness

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