

Review Pak #7

“Are We Alone In The Universe?”

Multiple Choice Questions

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|------|-------|-------|
| 1. A | 6. A | 11. B |
| 2. B | 7. D | 12. C |
| 3. A | 8. B | 13. D |
| 4. D | 9. D | 14. B |
| 5. C | 10. C | 15. A |

Free Response Questions

1. There are three pieces of evidence that support the Big Bang theory of the origin of the universe. Explain what each what is meant by each piece of evidence and why it is important.

Red shift

What is it?

If a star is moving away from us, the light gets stretched out. This makes it appear redder than it really is.

Why is it important?

Observations of distant galaxies show a redshift in the light from the stars. Redshift provides strong evidence for the idea that the universe is getting bigger over time.

Cosmic microwave background radiation

What is it?

The small amount of microwave radiation that is evenly distributed throughout the universe.

Why is it important?

The initial energy from the Big Bang should have spread out evenly throughout the universe. As the universe cooled, this energy would have red shifted to the microwave range of the spectrum.

An abundance of Hydrogen and Helium in the universe.

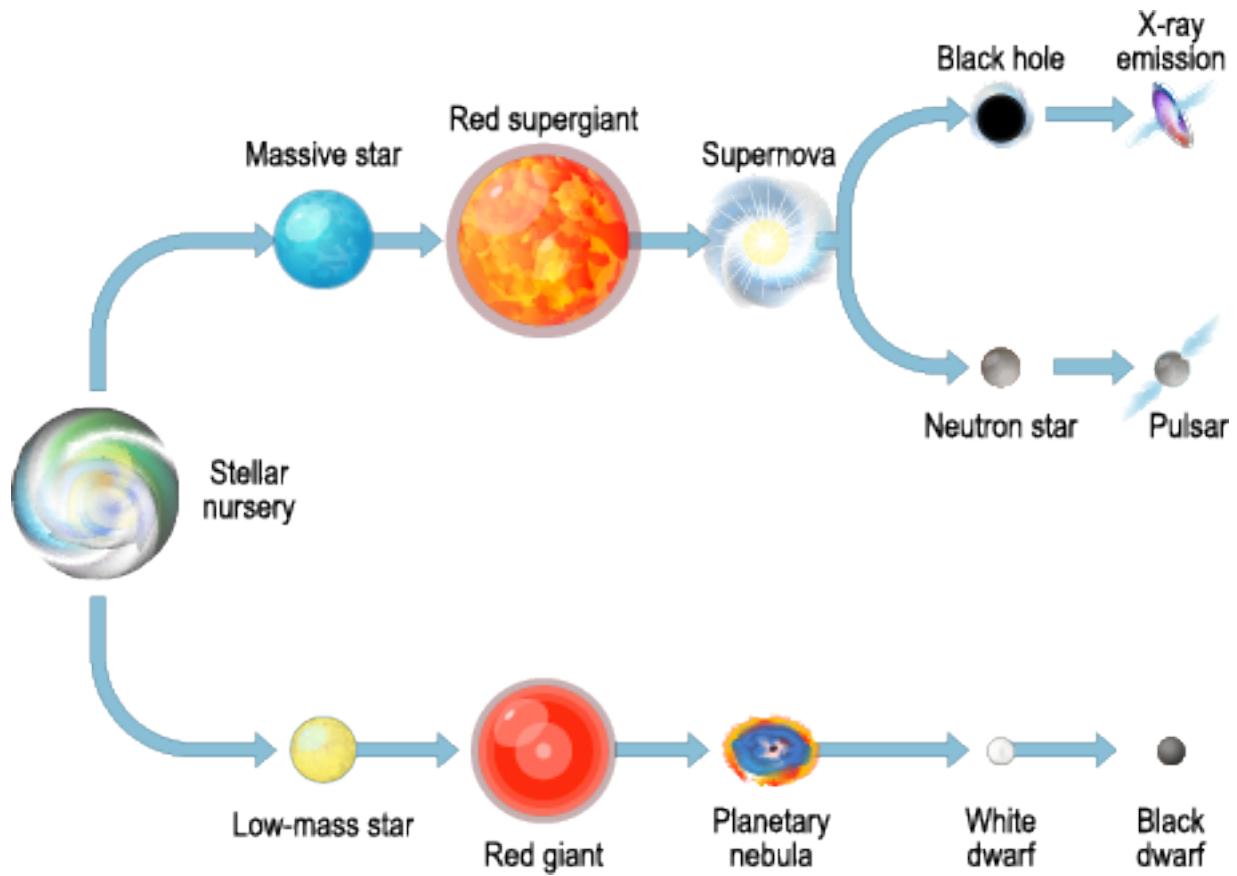
What is it?

The universe consists of mainly hydrogen and helium.

Why is it important?

The Big Bang would have produced large amounts of hydrogen and helium due to nuclear fusion.

2. Use the word bank to label the following diagram of the life cycle of stars



3. Briefly explain why the Sun will not become a black hole.

The Sun is a low-mass star. Low mass stars do not have enough mass to explode and collapse to make a black hole.