

Review Pak #7

“Are We Alone In The Universe?”

Multiple Choice Questions

1. The average distance between the Earth and the Sun is
 - (A) an astronomical unit.
 - (B) a light year.
 - (C) a parsec.

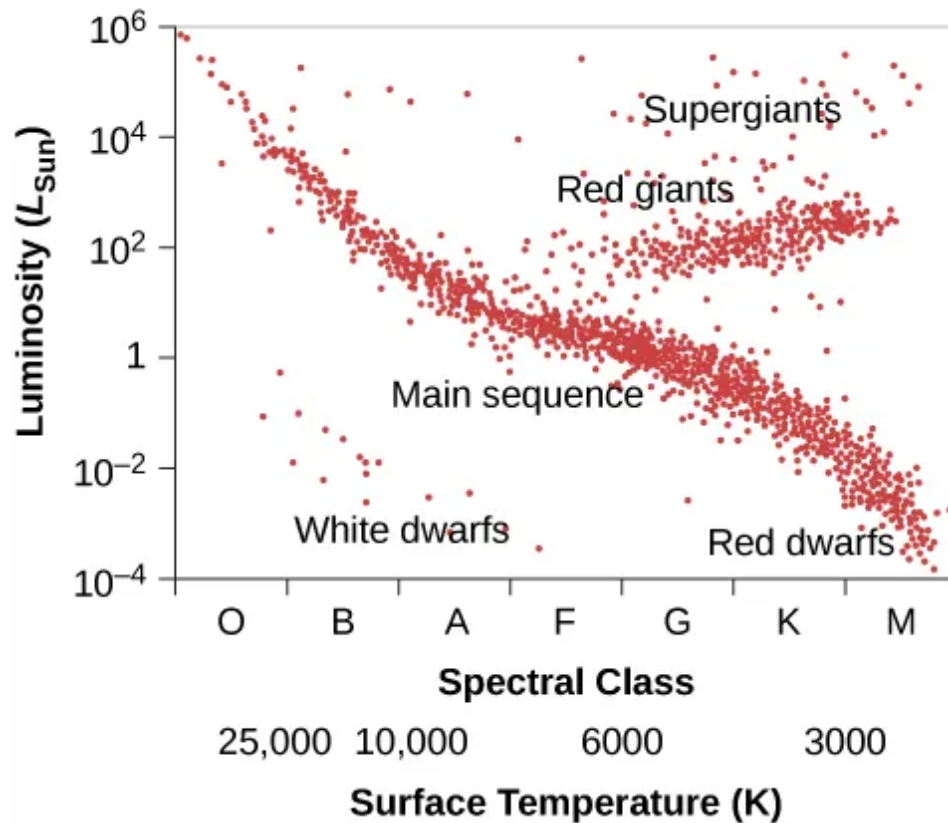
2. The distance light travels in a year is
 - (A) an astronomical unit.
 - (B) a light year.
 - (C) a parsec.

3. According to the Big Bang theory, the approximate age of the universe is
 - (A) 13.8 billion years.
 - (B) 13.8 million years.
 - (C) 1.38 billion years.
 - (D) 1.38 million years.

4. The life cycle of a star depends on its
 - (A) brightness.
 - (B) density.
 - (C) volume.
 - (D) mass.

5. Gas and dust are pulled together by gravity in a nebula to form a
- (A) main sequence star.
 - (B) white dwarf star.
 - (C) protostar.
 - (D) black hole.
6. Stars shine due to
- (A) nuclear fusion.
 - (B) nuclear fission.
 - (C) chemical reactions between hydrogen and oxygen.
 - (D) the burning of iron.
7. Stars are primarily made of
- (A) silicon.
 - (B) iron.
 - (C) helium.
 - (D) hydrogen.
8. Approximately what percentage of stars are main sequence stars?
- (A) 95%
 - (B) 90%
 - (C) 85%
 - (D) 80%

Questions 9 – 12 refer to the following H-R diagram.



9. Which classification of stars have the highest luminosity?

- (A) Red giants
- (B) Main sequence
- (C) White dwarfs
- (D) Supergiants

10. What is the temperature range of Red Giants?

- (A) 8000 – 30000 K
- (B) 5000 – 6000 K
- (C) 2000 – 6000 K
- (D) 2000 – 30000 K

11. A star with a temperature of 5500 K and a luminosity of 1 would belong to what classification of stars?
- (A) Red giants
 - (B) Main sequence
 - (C) White dwarfs
 - (D) Red dwarfs
12. A star with a temperature of 25000 K and a luminosity of 10^{-2} would belong to what classification of stars?
- (A) Red giants
 - (B) Main sequence
 - (C) White dwarfs
 - (D) Red dwarfs
13. What color of star is the hottest?
- (A) yellow
 - (B) white
 - (C) blue
 - (D) red.
14. An explosion on the surface of the sun is known as a
- (A) sun spot.
 - (B) solar flare.
 - (C) volcano.
 - (D) aurora.

15. Areas of reduced magnetic activity on the sun are called

- (A) sun spots.
- (B) solar flares.
- (C) volcanoes.
- (D) auroras.

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?

Why is it important?

Cosmic microwave background radiation

What is it?

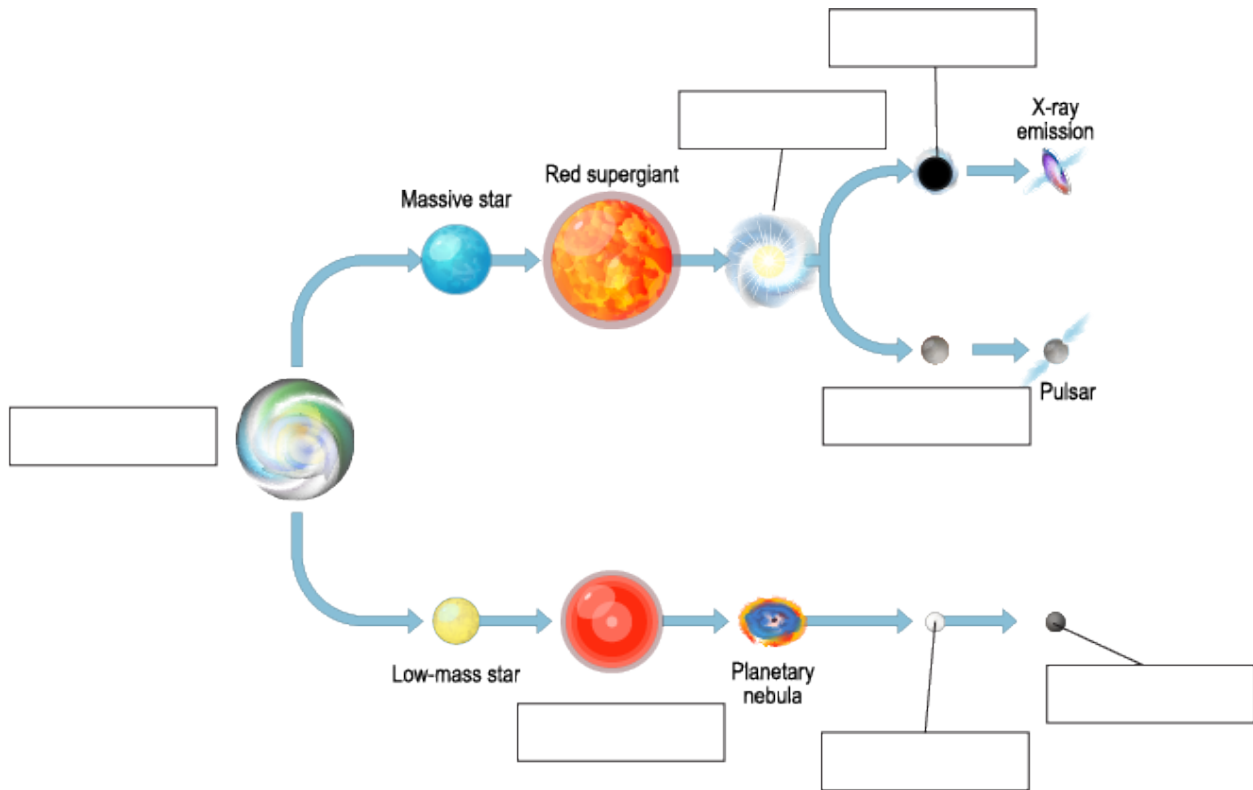
Why is it important?

Hydrogen and Helium

What is it?

Why is it important?

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



Black dwarf	Nebula	Red giant	White dwarf
Black hole	Neutron star	Supernova	

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