BRITISH COLUMBIA SCIENCE 10 · UNIT D · 25 QUESTIONS

The Universe and the Big Bang — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The big bang theory states that the universe began as**

- A a cold empty space that filled with stars
- B a single star that exploded
- C a hot dense state that has expanded ever since
- D a black hole that released planets

Understand It with Pulse | Flag a mistake

2 **The graph shows recession speed against distance for four galaxies. The recession speed of the galaxy at distance 3 in the graph units, is _____**

ANSWER

Understand It with Pulse | Flag a mistake

3 **Cosmic microwave background radiation is**

A leftover heat from the early universe

B light from the nearest star

C radio signals sent by satellites

D heat from inside Earth

Understand It with Pulse | Flag a mistake

4 **Light from a galaxy moving away from Earth shows**

A a blueshift

B a redshift

C no shift

D a brighter image only

Understand It with Pulse | Flag a mistake

5 **Light from a galaxy moving toward Earth shows**

A a redshift

B a greenshift

C no shift

D a blueshift

Understand It with Pulse | Flag a mistake

6 **Observations show that galaxies farther from Earth generally**

A move away faster

B move toward Earth faster

C do not move at all

D move away more slowly

Understand It with Pulse | Flag a mistake

7 **A radio telescope is useful because it detects**

- A only visible light
- B radio waves from space, even through clouds
- C sound waves from planets
- D heat from inside Earth

Understand It with Pulse | Flag a mistake

8 **SNOLAB is a laboratory built deep underground in Canada mainly to study**

- A ocean tides
- B weather patterns
- C neutrinos and dark matter, shielded from cosmic rays
- D volcanoes

Understand It with Pulse | Flag a mistake

9 **A Mars rover helps scientists learn about Mars by**

- A carrying astronauts to Mars
- B changing the Martian climate
- C melting the polar ice caps
- D studying rocks and signs of past water

Understand It with Pulse | Flag a mistake

10 **The International Space Station is**

- A an orbiting laboratory where crews run experiments
- B a telescope on the Moon
- C a rocket that visits Mars
- D a satellite that only takes photos

Understand It with Pulse | Flag a mistake

11 **The Canadarm on the space station is used to**

- A launch rockets
- B move cargo and help spacewalkers
- C grow food for the crew
- D make drinking water

Understand It with Pulse | Flag a mistake

12 **Dextre is a two-armed robot on the space station used for**

- A launching rockets
- B housing the crew
- C fine repair and maintenance tasks
- D cooking meals

Understand It with Pulse | Flag a mistake

13 **Which of the following is NOT a fundamental force**

A gravity

B electromagnetism

C the strong force

D friction

Understand It with Pulse | Flag a mistake

14 **As the early universe expanded and cooled**

A energy formed matter such as protons and neutrons

B all matter turned back into pure energy

C stars formed at once

D planets formed before stars

Understand It with Pulse | Flag a mistake

15 **Stars form when clouds of gas and dust in space**

A explode at once

B collapse under gravity and heat up

C freeze into solid rock

D are pushed apart by wind

Understand It with Pulse | Flag a mistake

16 **Hydrogen and helium, the lightest elements, formed mainly**

A inside planets

B in supernova explosions only

C in the early universe

D inside black holes

Understand It with Pulse | Flag a mistake

17 **A telescope with a larger mirror is better because it**

- A magnifies more but collects less light
- B works only at night
- C sees through clouds
- D collects more light and shows fainter objects

Understand It with Pulse | Flag a mistake

18 **A space telescope has an advantage over a ground telescope because it is**

- A above most of the atmosphere
- B closer to the stars
- C shielded from all light
- D powered by starlight

Understand It with Pulse | Flag a mistake

19 **The Doppler shift of sound is heard when an ambulance passes because**

A the siren gets louder

B the sound waves are stretched or squeezed by motion

C the driver changes the siren tone

D sound travels faster than light

Understand It with Pulse | Flag a mistake

20 **Evidence supporting the big bang theory includes**

A expansion of the universe only

B background radiation only

C the abundance of light elements only

D expansion, background radiation, and light element abundance

Understand It with Pulse | Flag a mistake

21 **The graph shows the relative brightness of a star against distance. The relative brightness at distance 2 is _____**

ANSWER _____

Understand It with Pulse | Flag a mistake

22 **Most astronomers agree that the universe is still**

A expanding

B shrinking to a point

C unchanging

D collapsing into Earth

Understand It with Pulse | Flag a mistake

23

A Mars rover can help answer whether Mars once had liquid water because it can

A change the Martian climate

B collect and examine rock samples

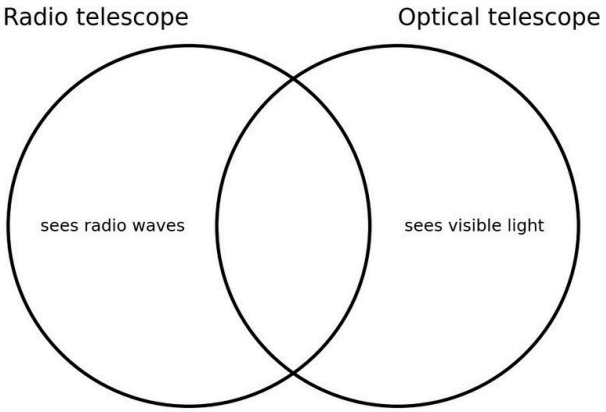
C fly to the Sun

D make oxygen for cities

Understand It with Pulse

Flag a mistake

24 **The diagram compares radio telescopes and optical telescopes. The statement in the overlapping region is**



- **A** detects radio waves
- **B** detects visible light
- **C** collects light from space
- **D** orbits Earth

Understand It with Pulse | Flag a mistake

25 **Light from a distant galaxy has a rest wavelength of 500 units and an observed wavelength of 550 units. The wavelength shift, in units, is**

_____

ANSWER

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. C
2. 210
3. A
4. B
5. D
6. A
7. B
8. C
9. D
10. A
11. B
12. C
13. D
14. A
15. B
16. C
17. D
18. A
19. B
20. D
21. 25
22. A
23. B
24. C
25. 50

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