

Middle School Astrophysics Basics

Astrophysics · Answer Key · 18 Questions

1. What force is primarily responsible for keeping planets in orbit around stars?

- A) Magnetic force
- B) Nuclear force
- C) Gravitational force**
- D) Electrostatic force

2. Which of the following is a large, glowing ball of gas, primarily hydrogen and helium, that produces its own light and heat through nuclear fusion?

- A) Planet
- B) Moon
- C) Comet
- D) Star**

3. What is the name of the galaxy that contains our Solar System?

- A) Andromeda Galaxy
- B) Triangulum Galaxy
- C) Milky Way Galaxy**
- D) Whirlpool Galaxy

4. What causes the different phases of the Moon that we observe from Earth?

- A) Earth's shadow falling on the Moon
- B) The Moon emitting its own light
- C) The Moon's rotation speed
- D) The changing angle at which we see the Moon's sunlit surface**

5. Which planet in our Solar System is known for its prominent rings, made up of ice particles and rocky debris?

- A) Mars
- B) Jupiter
- C) Saturn**
- D) Uranus

6. What is a celestial object that orbits a star but is not massive enough to clear its orbital path of other debris?

- A) Planet
- B) Asteroid
- C) Dwarf planet**
- D) Moon

7. The Sun is a star located at the center of our Solar System. What is its approximate surface temperature?

- A) 5,500 degrees Celsius**
- B) 15 million degrees Celsius
- C) 500 degrees Celsius
- D) 200 degrees Celsius

8. What is the term for a celestial body composed of ice, dust, and rock that orbits the Sun and develops a visible tail as it approaches the Sun?

- A) Meteor
- B) Asteroid
- C) Comet**
- D) Nebula

9. Which of the following is the closest star to Earth, other than our Sun?

- A) Sirius
- B) Alpha Centauri**
- C) Polaris
- D) Betelgeuse

10. What is the scientific study of the origin, evolution, and fate of the Universe called?

- A) Geology
- B) Meteorology
- C) Cosmology**
- D) Biology

11. A 'light-year' is a unit of measurement for:

- A) Time
- B) Speed
- C) Distance**
- D) Mass

12. What is a sudden, intense burst of radiation from the Sun's surface called?

- A) Solar eclipse
- B) Solar flare**
- C) Nebula
- D) Supernova

13. Which planet in our Solar System is known as the 'Red Planet' due to its iron oxide surface?

A) Venus

B) Mars

C) Jupiter

D) Mercury

14. What is a massive system of stars, gas, dust, and dark matter held together by gravity?

A) Nebula

B) Star cluster

C) Galaxy

D) Constellation

15. What is the process by which stars generate energy, converting hydrogen into helium in their core?

A) Chemical reaction

B) Nuclear fission

C) Nuclear fusion

D) Gravitational collapse

16. Which planet is the largest in our Solar System?

A) Earth

B) Saturn

C) Jupiter

D) Neptune

17. What is a region of spacetime exhibiting such strong gravitational effects that nothing--not even particles and electromagnetic radiation such as light--can escape from inside it?

A) Neutron star

B) Pulsar

C) Black hole

D) Quasar

18. The path an object follows around another object in space, such as a planet around a star, is called its:

A) Rotation

B) Axis

C) Orbit

D) Revolution