

SET-A

1. **What is the outer layer of the Sun's atmosphere called?**
 - A) Chromosphere
 - B) Photosphere
 - C) Corona
 - D) Core

2. **What type of telescope uses a mirror to gather and focus light?**
 - A) Refracting telescope
 - B) Reflecting telescope
 - C) Radio telescope
 - D) Infrared telescope

3. **What is an exoplanet?**
 - A) A planet within our solar system
 - B) A planet outside our solar system orbiting a star
 - C) A moon of a planet
 - D) A planet that has no atmosphere

4. **Who is known as the "father of observational astronomy" for his work with the telescope?**
 - A) Copernicus
 - B) Galileo Galilei
 - C) Johannes Kepler
 - D) Tycho Brahe

5. **What was the purpose of the Arecibo Observatory?**
 - A) Optical astronomy
 - B) Radio astronomy and radar observations of planets
 - C) X-ray astronomy
 - D) Infrared astronomy

6. **What is the speed of light in a vacuum?**
 - A) Approximately 300,000 kilometers per second
 - B) Approximately 150,000 kilometers per second
 - C) Approximately 450,000 kilometers per second
 - D) Approximately 1,000,000 kilometers per second

7. **What is a solar flare?**
 - A) A sudden, intense burst of radiation from the Sun's surface
 - B) A gradual increase in solar brightness
 - C) A long-lasting explosion on the Sun
 - D) A type of solar wind event

8. **What is the primary role of rocket fins?**
 - A) To increase thrust
 - B) To stabilize and control the rocket's flight path

- C) To reduce drag
 - D) To provide additional weight
9. **Which color of visible light has the shortest wavelength?**
- A) Red
 - B) Green
 - C) Blue
 - D) Violet
10. **What force opposes a rocket's motion during its ascent?**
- A) Gravity
 - B) Thrust
 - C) Drag
 - D) Lift
11. **What is light pollution?**
- A) Excessive or obtrusive artificial light
 - B) The natural phenomenon of moonlight
 - C) The absence of light in urban areas
 - D) The use of light in astronomical observations
12. **Which galaxy contains the supermassive black hole named Sagittarius A?**
- A) Andromeda Galaxy
 - B) Milky Way Galaxy
 - C) Whirlpool Galaxy
 - D) Sombrero Galaxy
13. **What is the central region of a galaxy called?**
- A) Galactic Halo
 - B) Galactic Core
 - C) Spiral Arm
 - D) Bulge
14. **What is a nebula?**
- A) A type of star
 - B) A vast cloud of gas and dust in space
 - C) A group of galaxies
 - D) A type of planet
15. **What causes a reflection nebula to shine?**
- A) The emission of light from its own gas
 - B) The reflection of light from nearby stars
 - C) The fusion of hydrogen atoms
 - D) The absorption of radiation

16. **What is the primary cause of sunspots?**
- A) Increased solar radiation
 - B) Magnetic field fluctuations
 - C) Solar wind interaction
 - D) Atmospheric disturbances
17. **What is the "habitable zone" around a star?**
- A) The region where planets cannot exist
 - B) The region where conditions might be right for life as we know it
 - C) The area directly on the star's surface
 - D) The zone where black holes are formed
18. **What significant astronomical observation did Tycho Brahe make in the late 16th century?**
- A) Discovery of the moons of Jupiter
 - B) Observation of a supernova
 - C) Determination of the size of the Milky Way
 - D) Measurement of the distance to the stars
19. **Approximately how long after the Big Bang did the first light (cosmic microwave background radiation) emerge?**
- A) 1 second
 - B) 380,000 years
 - C) 1 million years
 - D) 1 billion years
20. **What causes solar flares?**
- A) The collision of asteroids with the Sun
 - B) The release of energy from twisted magnetic field lines
 - C) The gravitational pull of the Earth
 - D) The fusion of heavy elements in the Sun
21. **What phenomenon occurs when light changes direction as it passes from one medium to another?**
- A) Reflection
 - B) Refraction
 - C) Diffraction
 - D) Dispersion
22. **What principle explains how rockets are propelled forward?**
- A) Newton's First Law of Motion
 - B) Newton's Second Law of Motion
 - C) Newton's Third Law of Motion

D) Bernoulli's Principle

23. What is skyglow?

- A) Brightness caused by light reflecting off clouds
- B) Direct glare from streetlights
- C) Light that spills over from one property to another
- D) Light emitted by astronomical objects

24. What role do black holes play in the evolution of galaxies?

- A) They prevent galaxies from forming
- B) They consume stars and gas, influencing star formation rates
- C) They create new stars
- D) They do not have any significant impact on galaxies

25. What distinguishes an elliptical galaxy from a spiral galaxy?

- A) Elliptical galaxies have a defined disk structure
- B) Elliptical galaxies lack significant amounts of gas and dust
- C) Elliptical galaxies contain many young stars
- D) Elliptical galaxies have prominent spiral arms

26. Which of the following is true about dark nebulae?

- A) They emit light due to ionization
- B) They are bright and easily visible
- C) They block light from objects behind them
- D) They are primarily made of helium

27. What was a significant outcome of the Hubble Space Telescope's observations regarding the universe's expansion?

- A) Discovery of black holes
- B) Measurement of dark energy's role in cosmic expansion
- C) Identification of the oldest stars
- D) Mapping the structure of the Milky Way

28. What concept explains the quantization of light energy into discrete packets called photons?

- A) Wave-particle duality
- B) Quantum mechanics
- C) Classical mechanics
- D) Electromagnetic theory

29. Which city is known for its efforts to reduce light pollution through dark sky initiatives?

- A) New York City
- B) Flagstaff, Arizona

- C) Los Angeles, California
- D) Tokyo, Japan

30. **What type of galaxy is characterized by a smooth, featureless light profile?**

- A) Irregular galaxy
- B) Elliptical galaxy
- C) Lenticular galaxy
- D) Barred spiral galaxy