Solar System Test - Grade 5

Multiple Choice
Directions: Identify the choice that best completes the statement or answers the question. Write this answer on your answer document.

1. Why does the Earth experience seasons?
   a. The Earth is tilted on its axis
   b. The Sun is hotter in the Spring and Summer
   c. The Earth gets less sun in the Fall and Winter
   d.

2. Earth takes 365 ¼ days to orbit the Sun. Which of the following is a result of this fact?
   a. 
   b. February has 28 days instead of 30
   c. An extra day is added every four years
   d. Some holidays are on different dates each year

3. The majority of asteroids are found in a belt located between what two planets?
   a. Earth and Mars
   b. 
   c. Mars and Jupiter
   d. Jupiter and Saturn

4. What keeps the Earth in its orbit?
   a. 
   b. The Sun’s gravitational pull
   c. The Earth’s spin direction
   d. The Earth’s location between other planets

5. A year on Jupiter is 4,333 days long. A year on Mercury is 88 days long. Why do planets have different length years?
   a. A year is longer on larger planets
   b. Each planet has its own orbital period
   c. Some planets are larger than other planets
   d.
6. What causes the phases of the Moon?

   a. The Moon is tilted on its axis
   b. 
   c. The positions of the Moon as viewed from Earth
   d. The pull of gravity between the Moon and the Earth

7. When standing on the Earth, the Moon and Sun appear to rise in the east and set in the west. What is responsible for this apparent movement of the sun and moon?

   a. The Earth revolves around the Sun.
   b. The Earth rotates on its axis
   c. 
   d. The Sun and Moon move from east to west in Space.

8. The diagram shows the view of earth looking **downward from the North Pole**. Cleveland is located at approximately Point A. In 12 hours, predict the position of Cleveland compared to the sun.

   a. Cleveland will be at Position A
   b. Cleveland will be at Position B
   c. Cleveland will be at Position C
   d. 

9. It takes 29.5 days for the moon to make one complete cycle through its phases. If the moon is currently in the waxing crescent phase, predict what phase it would be in two weeks.

   a. 
   b. First quarter
   c. Waning gibbous
   d. Waxing gibbous
10. In the diagram below, at which position in Earth’s orbit will Ohio be experiencing spring?
   a. Position A
   b.______________
   c. Position C
   d. Position D

11. What makes a star different from other objects in the solar system, such as planets, moons and asteroids?
   a. The Moons and planets produce light
   b. Stars orbit and planets do not
   c. Stars produce their own light
   d.

12. The diagram below represents the Sun and planets of our solar system

   Which planet on the above diagram represents Earth?
   a. G
   b. H
   c.______________
   d. M

13. In the diagram above represents which planet represents Neptune?
   a.______________
   b. H
   c. K
   d. M

14. What regular motion causes the pattern of day and night on Earth?
   a. Earth rotates on its axis
   b. Earth orbits around the sun
   c. The moon rotates on its axis
   d.
The diagram below represents the Earth

15. Based on the diagram above, what season is it at Point C?
   a. Summer
   b. Fall
   c. 
   d. Spring

16. Solar panels are placed on homes to gather the sun’s light energy. This solar energy is then used to power a house. For example, solar power may be used to run appliances or to heat water. In which geographic location would solar panels work the best?
   a. In Alaska
   b. 
   c. In Florida
   d. In Antarctica

17. The sun is a star of average size and brightness. From Earth, the sun appears as a round, yellow object in the daytime sky. At night, we see other stars. They appear as tiny points of light. Why does the sun appear larger than stars that we see at night?
   a. Daylight brightens the sun, making it appear larger.
   b. 
   c. The sun is closer to Earth than other stars, making the sun appear larger.
   d. Earth’s atmosphere filters out light from other stars, making them appear smaller.
18. A student is looking at the night sky and observes the following image. The use of which tool allows the student to easily observe the image?

a. binoculars  
b. telescope  
c. magnifying glass  
d.

19. Carol saw a streak of light cross the night sky. She called it a “shooting star.” What did Carol actually see in the night sky?

a. comet  
b.  
c. meteor  
d. the sun

20. Which diagram correctly shows the orbit of the Earth (E) and moon (M) around the sun (S)?

a. Diagram A  
b.  
c. Diagram C  
d. Diagram D

21. What is the most likely “next step” in a star that is in the red giant phase?

a. a yellow dwarf  
b. a white dwarf  
c. a black hole  
d.

22. Students collected data on the temperature of stars and completed the chart to the right. Which of the stars is burning at the coolest temperature?

a. Rigel  
b. Sun  
c. Betelgeuse  
d.
Written Response Questions

23. **SHORT ANSWER** (2 points) Gravity is a major force in the solar system. Describe two effects that gravity has between objects in the solar system. *(Note: DO NOT describe that gravity keeps objects from floating into space. Think about all the other role’s gravity plays!)*

25. **EXTENDED RESPONSE** (4 points) Compare Comets to Asteroids by completing the Venn Diagram. Use the choices listed to contrast the two object. *(Note: all choices may not apply to asteroids or comets.)*

26. **SHORT ANSWER** (2 points) Many of the motions of the solar system are regular and predictable, meaning they happen over and over in a pattern. Identify one regular and predictable motion of the solar system. Then, describe how long that movement takes.

27. **SHORT ANSWER** (2 points) Our Earth is a very special planet because it is the only planet in our solar system that can support life. Describe two characteristics that make Earth unique and able to support life.

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**Characteristics of Celestial Objects:**
- Orbit the sun
- Composed of rock
- Pass through the atmosphere
- Usually burn up in Earth’s atmosphere
- Has a tail, coma and nucleus
- Go through a life cycle
- Create its own light
- Composed of gas, ice and dust