The Solar System

A. Choose the correct answer:

- 1. What is the largest planet in our solar system?
 - a) Earth
 - b) Mars
 - c) Jupiter
 - d) Venus

2. Which planet is known as the "Red Planet"?

- a) Mercury
- b) Venus
- c) Mars
- d) Saturn

3. What is the primary reason for seasons on Earth?

- a) Distance from the Sun
- b) Earth's axial tilt
- c) Changes in solar energy output
- d) The Moon's gravitational pull

B. Fill in the Blanks:

- 1. The Sun is a ______, which provides light and heat to the solar system.
- 2. The planet with the most extensive ring system is ______.
- 3. The only natural satellite of Earth is called ______.

C. Case Study:

An astronomer, Dr. Sharma, conducted research on planetary motion and their impact on space exploration. She observed the movements of three planets:

- **Planet X** has a thick atmosphere of carbon dioxide and experiences extreme greenhouse effects.
- **Planet Y** has no atmosphere, making its surface temperatures vary drastically between day and night.
- Planet Z has a gas-based composition with strong storms and multiple moons.

After studying their characteristics, Dr. Sharma noted:

- **Planet X** is extremely hot and has high surface pressure.
- Planet Y has many craters due to asteroid impacts.

• Planet Z has powerful winds and a massive storm visible for centuries.

Questions & Answers:

- 1. Based on the given descriptions, identify Planet X, Y, and Z.
- 2. Why does Planet X have such high temperatures?
- 3. What causes the extreme temperature variations on Planet Y?
- 4. What makes the storm on Planet Z so long-lasting?

D. Short Answer Questions:

- 1. Why is the Sun considered the center of the solar system?
- 2. What are the main differences between terrestrial and gas giant planets?
- 3. How does the Moon affect Earth's tides?

E. Long Answer Questions:

- 1. Explain the formation of the solar system and the role of gravity in keeping planets in orbit.
- 2. Describe the different types of planets in the solar system and their unique features.
- 3. Discuss how space exploration has helped us learn more about the solar system.