Comprehensive Exam

Question 1: Choose the correct answer for each question. [Multiple Choice] [Medium] [4 marks]

1. Which planet is the closest to the Sun and has the shortest orbital period

a) Mercury b) Earth c) Venus d) Mars

2. Which planet rotates in the opposite direction to the usual rotation of the planets?

a) Venus b) Jupiter c) Mercury d) Mars

3. Which planet is home to "Olympus Mons" the largest volcano in the solar system?

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

4. Which planet is famous for its large ring system?

a) Saturn b) Neptune c) Uranus d) Jupiter

5. Which Is the Fastest Spinning Planet in the Solar System?

a) Uranus b) Saturn c) Neptune d) Jupiter

Question 2: Write T if the statement is True and F if it is False. [True/False] [Easy] [2 marks]

1. Venus has a day longer than its year. ( )
2. Saturn is the only planet with rings. ( )
3. Jupiter rotates faster than any other planet. ( )
4. Earth has a longer day than Mars. ( )
5. Jupiter's great red spot is a giant storm. ( )

Question 3: Write T if the statement is True and F if it is False. [True/False] [Easy] [2 marks]

1. Mercury has a day longer than its year. True False
2. Saturn is not the only planet with rings. True False
3. Venus is the slowest spinning planet True False
4. Earth has a shorter day than Mars. True False
5. Neptune's great dark spot is a giant storm True False

Question 4: Arrange the items in the correct order. [Ordering] [Medium] [3 marks]

1. Arrange these planets in ascending order of their distance from the Sun.

a) Mars b) Jupiter c) Earth d) Mercury e) Venus

Order: ___, ___, ___, ___, ___

2. Arrange these planets in descending order of their size.

a) Uranus b) Earth c) Neptune d) Venus e) Saturn

Order: ___, ___, ___, ___, ___

3. Arrange these planets in descending order of their rotation speeds.

a) Earth b) Uranus c) Saturn d) Neptune e) Jupiter

Order: ___, ___, ___, ___, ___

4. Q: Arrange these planets in ascending order of their orbital periods.

a) Jupiter b) Neptune c) Mars d) Uranus e) Venus

Order: ___, ___, ___, ___, ___

Question 5: Fill in the blanks using the words in the box. [Fill in the Blank] [Medium] [4 marks]

Neptune	Jupiter	Mercury	Rings	Hottest	Milky Way	Asteroid	Center
Orbit	Atmosphere	Side					

1. The _____ Belt is a region located between the orbits of Mars and Jupiter.
2. Venus is the _____ planet in our solar system because its thick atmosphere traps heat.
3. Uranus is unique because it rotates completely on its _____ .
4. The Solar System is located inside the _____ Galaxy.
5. The Sun is located at the _____ of the solar system.
6. The smallest planet by diameter is _____, and the largest is _____.

Question 6: Match the phenomenon with its cause. [Matching] [Medium] [4 marks]

1) Mercury experiences extreme temperature swings between day and night.
2) Mars appears reddish-orange when viewed from Earth.
3) A distinct belt of asteroids exists between Mars and Jupiter.
4) Jupiter has powerful winds and a Great Red Spot.
5) Uranus rotates almost horizontally on its side compared with other planets.
6) Halley's Comet develops a glowing tail as it nears the Sun.

a) Because a massive collision with an Earth-sized protoplanet early in its history tilted its axis.
b) Because it has virtually no atmosphere to trap heat or distribute it around the planet.
c) because its surface is covered in iron oxide, or rust, which reflects red light.
d) Because the Sun's radiation vaporizes its ices, creating streams of gas and dust.
e) because its fast rotation and internal heat create massive, long-lasting storms.
f) Because Jupiter's intense gravity prevented the rocky debris from accreting into a planet.

Question 7: Match each space term with the correct description. [Matching] [Medium] [4 marks]

1) Meteor
2) Meteorite
3) Comet
4) Asteroids
5) Starg
6) Nebula
7) Galaxy

a) A giant ball of hot glowing gases that produces its own light and heat.
b) An icy object that forms a glowing tail when it gets close to the Sun.
c) A large cloud of gas and dust where new stars can form.
d) A huge collection of stars, gas, and dust held together by gravity.
e) Rocky objects that orbit the Sun, mostly found between Mars and Jupiter.
f) A piece of space rock that survives its fall and lands on Earth's surface.
g) A streak of light caused when a small space rock burns up in Earth atmosphere.

Question 8: Write a short, direct answer for each question. [Short Answer] [Easy] [3 marks]

1. Which planet is known as the red planet?

_____

_____

2. Which planet is known as the blue planet?

_____

3. Which planet is known as the giant planet? _____
4. Which planet is known as the twin planet of Earth? _____

Question 9: Answer the following questions scientifically and logically. [Essay] [Hard] [10 marks]

1. Imagine you are an astronaut standing on Mars, and you try to jump as high as you can. Will your jump be higher or lower compared to your jump on Earth? Explain your answer.

2. Even though Mercury is the closest planet to the Sun, Venus is the hottest planet in the solar system. Explain why?

3. Why do outer planets (like Jupiter and Saturn) have much longer years compared to inner planets (like Earth and Mercury)?

Question 10: Read the passage and answer the questions. [Reading Passage] [Medium] [8 marks]

Halley's Comet

Halley's Comet is the most famous comet in our solar system, known for visiting the inner solar system every 76 years. Unlike asteroids, comets are made of ice, dust, and rocky material, often called "dirty snowballs." When Halley's Comet gets close to the Sun, the heat turns its ice into gas, creating a glowing cloud and a long, bright tail that points away from the Sun. People on Earth can sometimes see it with the naked eye, as it last appeared in 1986 and will return in 2061. Throughout history, many civilizations recorded its appearance, believing it signaled great events or changes.

1. How often does Halley's Comet visit the inner solar system?

2. What materials make up a comet like Halley?

3. What causes the comet to develop a glowing tail?

4. When did Halley's Comet last appear, and when is it expected to return?