The Solar System

CLASS NOTES

- Solar System - ____________________________
  - The Sun accounts for _____________ of the mass in the solar system

- Solar System Formation:
  - Forming _________ billion years ago from a cloud of gas and dust called a solar nebula
  - _____________ caused the nebula to collapse and spin
  - A massive collection of gas and dust accumulated in the center
  - When it was massive enough it would undergo nuclear fusion and create the _____________
  - The additional material clumped together to form plants, dwarf planets, asteroids and moons

- Terrestrial Planets - ____________________________
  - Examples: Mercury — Venus — Earth — Mars

- Asteroids - ____________________________
  - A large percentage of the known asteroids are between _____________ and _____________

- Jovian Planets - ____________________________
  - Examples: Jupiter — Saturn — Uranus — Neptune

- Kuiper Belt - ____________________________

- Comet - ____________________________
  - As the solids melt they leave a trail behind known as a comets tail
The Solar System

• Oort Cloud - Thought to be the origin of most long-period comets
• Meteorites - aka: Shooting Stars

The Solar System

1. ____________________ 5. ____________________ 9. ____________________  
2. ____________________ 6. ____________________ 10. ____________________  
3. ____________________ 7. ____________________ 11. ____________________  
4. ____________________ 8. ____________________ 12. ____________________
PART I QUESTIONS: MULTIPLE CHOICE

1. Compared to Jupiter and Saturn, Venus and Mars have greater
   a. equatorial diameters
   b. orbital velocities
   c. mean distances from the Sun
   d. periods of revolution

2. The planets known as "gas giants" include Jupiter, Uranus, and
   a. Mars
   b. Pluto
   c. Earth
   d. Saturn

3. The average temperature of the planets
   a. decreases with greater distance from the Sun
   b. has no relationship to the distance from the Sun
   c. depends only on the chemical composition of the atmosphere of each planet
   d. increases with greater distance from the Sun

4. The Moon has more surface craters than Earth does because the Moon has
   a. a smaller diameter than Earth
   b. no significant atmosphere
   c. a surface more sensitive to impacts
   d. a stronger gravitational force

5. Which member of the solar system has a diameter of 3.48 x 10^3 kilometers?
   a. Earth
   b. Pluto
   c. the Sun
   d. Earth’s Moon

6. The surface of Venus is much hotter than would be expected, considering its distance from the
   Sun. Which statement best explains this condition?
   a. Venus has many active volcanoes.
   b. The clouds of Venus are highly reflective.
   c. Venus has a slow rate of rotation.
   d. The atmosphere of Venus contains a high percentage of carbon dioxide.

7. Which planet’s orbital shape would be most similar to Jupiter's orbital shape?
   a. Uranus
   b. Pluto
   c. Mercury
   d. Venus
8. A belt of asteroids is located an average distance of 503 million kilometers from the Sun. Between which two planets is this belt located?
   a. Mars and Earth
   b. Jupiter and Saturn
   c. Saturn and Uranus
   d. Mars and Jupiter

9. The formation of the planet Uranus is estimated to have occurred approximately
   a. 100,000 million years ago
   b. 2.0 billion years ago
   c. 4.6 billion years ago
   d. 13.7 billion years ago

10. Compared to the Jovian planets in our solar system, the terrestrial planets have
    a. less mass and are less dense
    b. less mass and are more dense
    c. more mass and are less dense
    d. more mass and are more dense

11. Compared to the terrestrial planets, the Jovian planets
    a. are less massive
    b. are more dense
    c. have greater orbital velocities
    d. have shorter periods of rotation

12. Planets that are closest to the Sun are identified as
    a. low-density Jovian
    b. low-density terrestrial
    c. high-density Jovian
    d. high-density terrestrial

13. Which planet has a density that is less than the density of liquid water?
    a. Mercury
    b. Earth
    c. Mars
    d. Saturn

14. The asteroid Ceres lies at an average distance of 414 million kilometers from the Sun. The period of revolution of Ceres around the Sun is approximately
    a. 438 days
    b. 687 days
    c. 4.6 years
    d. 12.6 years