

**-ANSWER KEY-**

**PART 1:**

**A.**

1. (a) \_\_\_\_\_ **Augira** \_\_\_\_\_  
(b) \_\_\_\_\_ **Capella** \_\_\_\_\_
2. (a) \_\_\_\_\_ **Mizar and Alcor** \_\_\_\_\_  
(b) \_\_\_\_\_ **Big Dipper** \_\_\_\_\_  
(c) \_\_\_\_\_ **Ursa Major** \_\_\_\_\_
3. (a) \_\_\_\_\_ **Pegasus** \_\_\_\_\_  
(b) \_\_\_\_\_ **Q** \_\_\_\_\_  
(c) \_\_\_\_\_ **Andromeda Galaxy** \_\_\_\_\_
4. (a) \_\_\_\_\_ **Arcturus** \_\_\_\_\_  
(b) \_\_\_\_\_ **Bootes** \_\_\_\_\_
5. (a) \_\_\_\_\_ **Cygnus** \_\_\_\_\_  
(b) \_\_\_\_\_ **Deneb** \_\_\_\_\_  
(c) \_\_\_\_\_ **The Summer Triangle** \_\_\_\_\_  
(d) \_\_\_\_\_ **Vega** \_\_\_\_\_ (f and g answers can be switched with d and e;  
(e) \_\_\_\_\_ **Lyra** \_\_\_\_\_ either order is ok as long as the pairs are correct)  
(f) \_\_\_\_\_ **Altair** \_\_\_\_\_  
(g) \_\_\_\_\_ **Aquila** \_\_\_\_\_
6. (a) \_\_\_\_\_ **Pleiades** \_\_\_\_\_  
(b) \_\_\_\_\_ **Open Cluster** \_\_\_\_\_  
(c) \_\_\_\_\_ **Gemini** \_\_\_\_\_  
(d) \_\_\_\_\_ **Castor (I)** \_\_\_\_\_ (answers to d and e can be switched)  
(e) \_\_\_\_\_ **Pollux (W)** \_\_\_\_\_
7. (a) \_\_\_\_\_ **Canis Major** \_\_\_\_\_  
(b) \_\_\_\_\_ **M** \_\_\_\_\_  
(c) \_\_\_\_\_ **Canis Minor** \_\_\_\_\_  
(d) \_\_\_\_\_ **T** \_\_\_\_\_  
(e) \_\_\_\_\_ **Procyon** \_\_\_\_\_
8. (a) \_\_\_\_\_ **The Beehive Cluster** \_\_\_\_\_  
(b) \_\_\_\_\_ **Scorpio** \_\_\_\_\_  
(c) \_\_\_\_\_ **Antares** \_\_\_\_\_
9. (a) \_\_\_\_\_ **The Great Nebula or The Orion Nebula** \_\_\_\_\_  
(b) \_\_\_\_\_ **Orion** \_\_\_\_\_  
(c) \_\_\_\_\_ **Betelgeuse** \_\_\_\_\_  
(d) \_\_\_\_\_ **U** \_\_\_\_\_  
(e) \_\_\_\_\_ **Rigel** \_\_\_\_\_  
(f) \_\_\_\_\_ **E** \_\_\_\_\_
10. (a) \_\_\_\_\_ **Cassiopeia** \_\_\_\_\_  
(b) \_\_\_\_\_ **Corona Borealis** \_\_\_\_\_  
(c) \_\_\_\_\_ **S** \_\_\_\_\_
11. (a) \_\_\_\_\_ **Aldebaran** \_\_\_\_\_  
(b) \_\_\_\_\_ **Taurus** \_\_\_\_\_  
(c) \_\_\_\_\_ **Hyades** \_\_\_\_\_

B.

- b. (a) 18<sup>h</sup>45<sup>m</sup>  
(b) ~14,000 AD
2. (a) Draco
3. (a) 24  
(b) 15<sup>0</sup>  
© 10,800<sup>0</sup>
4. (a) Capella  
(b) Auriga
5. (a) 0<sup>0</sup> (equator) to +30<sup>0</sup>

C.

- b. (a) Celestial Equator  
(b) Ecliptic  
© apparent path of the Sun
2. (a) 0<sup>h</sup>
3. (a) 6<sup>h</sup>  
(b) June 21<sup>st</sup>
4. (a) -23.5<sup>0</sup> to +23.5<sup>0</sup>
5. (a) +30<sup>0</sup> to +60<sup>0</sup>
6. (a) 18<sup>h</sup>, December 21<sup>st</sup>
7. (a) ~7<sup>h</sup>, -18<sup>0</sup>
8. (a) Arcturus  
(b) Bootes
9. (a) Scorpio  
(b) ~90<sup>0</sup>
10. (a) Taurus
11. (a) morning
12. (a) Jupiter and Saturn  
(b) Mars
13. (a) along the ecliptic
14. (a) The planets lie in the plane of the Solar System and the ecliptic is the  
apparent path of the Sun but in reality is the reflection of the Earth's  
tilt and revolution around the Sun and also lies in the plane of the  
Solar System with the other planets
15. (a) 27.3  
(b) 29.5

**You Must Turn In This Answer Section Before Starting Part 2**

**PART 2:**

**A**

1. **\_\_\_ K,L,J \_\_\_**
2. **\_\_\_ 5 \_\_\_**
3. **\_\_\_ S \_\_\_**
4. **\_\_\_ A \_\_\_**
5. **\_\_\_ P,O,Q \_\_\_**
6. (a) **\_\_\_ Mercury \_\_\_**  
(b) **\_\_\_ Ganymede \_\_\_**  
(c) **\_\_\_ Earth's Moon \_\_\_**  
(d) **\_\_\_ Earth \_\_\_**  
(e) **\_\_\_ Europa \_\_\_**  
(f) **\_\_\_ Mars \_\_\_**  
(g) **\_\_\_ Miranda \_\_\_**  
(h) **\_\_\_ Venus \_\_\_**

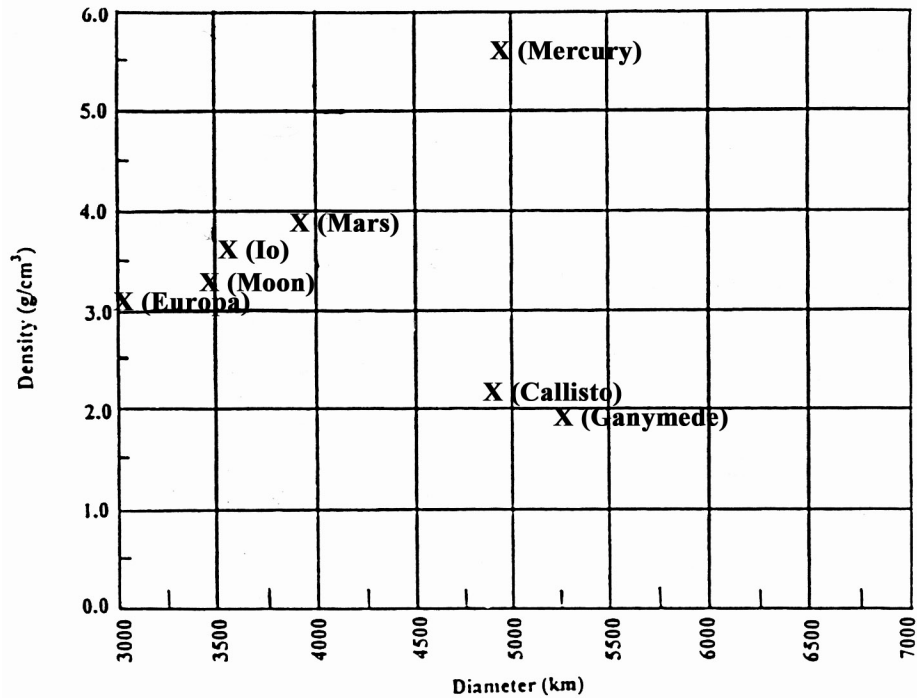
**B.**

**1.**

- A. **\_\_\_ Andromeda Galaxy (M31) \_\_\_**
  - B. **\_\_\_ Venus \_\_\_**
  - C. **\_\_\_ Orion Nebula (Great Nebula) \_\_\_**
  - D. **\_\_\_ Mars \_\_\_**
  - E. **\_\_\_ Total solar eclipse \_\_\_**
  - F. **\_\_\_ Pleiades open cluster \_\_\_**
  - G. **\_\_\_ Total Lunar Eclipse \_\_\_**
  - H. **\_\_\_ Red Spot on Jupiter \_\_\_**
  - I. **\_\_\_ Waning Crescent Moon \_\_\_**
  - J. **\_\_\_ Full Moon \_\_\_**
  - K. **\_\_\_ Callisto \_\_\_**
  - L. **\_\_\_ Beehive Cluster \_\_\_**
  - M. **\_\_\_ Io \_\_\_**
  - N. **\_\_\_ Annular Solar Eclipse \_\_\_**
  - O. **\_\_\_ Hyades open cluster \_\_\_**
  - P. **\_\_\_ Orion constellation \_\_\_**
  - Q. **\_\_\_ Saturn \_\_\_**
  - R. **\_\_\_ Europa \_\_\_**
  - S. **\_\_\_ lunar south pole \_\_\_**
2. (a) **\_\_\_ Io (M) \_\_\_**  
(b) **\_\_\_ Venus (B), Mars (D), Moon (G,I,J, or S) \_\_\_**
  3. (a) **\_\_\_ Orion nebula (C) is in Orion (P) \_\_\_**  
(b) **\_\_\_ the 2 stars Betelgeuse and Rigil \_\_\_**

C.

1.



2. \_\_\_\_\_ Calisto and Mercury are similar in size, Io and the Moon are similar in \_\_\_\_\_ size, Europa is smaller than the Moon, and Ganymede is between Mars \_\_\_\_\_ and Mercury \_\_\_\_\_

3. (a) \_\_\_\_\_ Mercury \_\_\_\_\_

(b) \_\_\_\_\_ Ganymede \_\_\_\_\_

4. \_\_\_\_\_ density decreases with distance so the inner moons have a higher metal \_\_\_\_\_ content and the outer moons have a density not much higher than water \_\_\_\_\_ and so are composed of mostly icy materials \_\_\_\_\_

D.

1. \_\_\_\_\_ Venus, Earth, Mars, 47 UmaB, 16 Cyg B \_\_\_\_\_

2. \_\_\_\_\_ Mars, 16 Cyg B \_\_\_\_\_

3. (a) \_\_\_\_\_ 4 Earth days \_\_\_\_\_

(b) \_\_\_\_\_ 129 Earth days \_\_\_\_\_

4. \_\_\_\_\_ there is no relationship between size and distance \_\_\_\_\_

5. \_\_\_\_\_ one of the closest planets is 3.8 Jupiter masses, then there are some less \_\_\_\_\_ than 1 Jupiter mass and the furthest planet is 2.4 Jupiter masses \_\_\_\_\_

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