**Out of This World (Sun and Earth & Moon) Assignment - Value 75 pts – February 28, 2019**

**DUE DATE: MARCH 1, 2019 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sun and Earth (15 pts)**

1. *Time Line of Discoveries*: Use the following names to discover who was responsible for each the following. **Value 9**

***Edwin Hubble Georges Lemaitre Johannes Kepler Nicolaus Copernicus Aristotle***

***Egyptians Aleksandr Friedmann Isaac Newton*** **Galileo Galilei**

1. About 1600: This person proves that the Earth revolves around the Sun. ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. 1924: This person discovers that there are other galaxies. He also notices that the Universe is getting bigger. ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Over 5000 years ago, who created the first 365 days calendar? ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. 1609: This person uses a looking glass to observe the mountains on the Moon, the sun spots and Jupiter’s four largest moons. ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. 1920s: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ develop the Big Bang Theory.
6. Over 2500 years ago, the Greeks know that the Earth is round, thanks to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
7. 1543: People think that the Sun orbits the Earth but this person thinks that it’s the Earth that rotates around the Sun. ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. About 1672: This person invents the first telescope and comes up with the Universal Law of Attraction or gravity. It explains the movements of the moons, planets and stars.

 ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. During which two seasons is the day the same length as the night? Value 2

**ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. If the Earth’s axis was not tilted (to 23.5 degrees), would the days and seasons on Earth be different? Value 2

**ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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1. If the Earth’s axis was tilted more than 23.5 degrees, would the days and seasons on Earth be different? Value 2

**ANS: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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**Moon & Moon Phases (45 pts)**

1. The moon is a large sphere of: (1 pt.)
2. Lava
3. Rock
4. Gas
5. What does the moon not have? (1 pt.)
6. Rain, craters, water
7. Craters, air, life
8. Air, water, life
9. True or False: There is no wind or rain on the moon therefore its surface changes very little. (1 pt.)
10. How many Apollo missions went to the Moon between 1969 and 1972? (1 pt.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_
11. What is the name of the dark regions on the Moon called? (1 pt.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
12. What is the name of the pale areas on the Moon covered with? (1 pt.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
13. What is the size of the largest crater on the Moon? (1 pt.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
14. What is the size of the largest crater on the Earth? (1 pt.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
15. How many days does it take the moon to make one full revolution or circle around Earth? (1 pt.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
16. Why do we see the Moon? (2 pts.)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Fill in the blanks.(9 pts.)
2. The “New Moon” is when the Moon is between the \_\_\_\_\_\_\_\_\_\_\_\_ and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. We can only see the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ side of the Moon.
3. The First quarter occurs one week later (after the New Moon), the Moon is side by side with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and it appears as a bright \_\_\_\_\_\_\_\_\_\_\_\_ circle.
4. The Full moon occurs one week later (after the First quarter), the Earth stands \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the Moon and Sun. It looks like a very bright \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ circle.
5. The Last quarter occurs one week later (after the Full moon), it is again beside Earth and looks like a bright \_\_\_\_\_\_\_\_\_\_\_\_\_\_ circle but on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ side compared to the first quarter.
6. As the moon makes its monthly journey around the Earth, the side of the moon reflecting the sunlight is viewed from different angles.
7. Identify each phase of the moon as it revolves around Earth (color the reflecting side yellow and the shaded side with pencil). NOTE THE POSITION OF THE SUN!! **Value 8**



(a) Provide a labelled diagram representing a lunar eclipse (label the planets and sun) in the proper order. **Value 3**

(b) Provide a labelled diagram representing a solar eclipse (label the planets and sun) in the proper order. **Value 3**

1. Identify each of the following phases of the moon below using the following terms: **Value 8**

***Waning Gibbous First Quarter Waxing Gibbous Full Moon***

***Waning Crescent New Moon Waxing Crescent Third Quarter***



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*Name: Name: Name:*

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**Name: Name:**

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1. Do we always see the same side of the moon? If so, why? Research the answer. **Value 3**

**The Sun (15 pts)**

1. **The Sun -** Find a brief description for each of the following terms: **Value 8**
2. Photosphere
3. Core
4. Convection zone
5. Radiative zone
6. Prominence
7. Chromosphere
8. Corona
9. Sun spots
10. ***Sun Facts –Indicate whether the following statement are True or False. Value 7***

***RESEARCH THE ANSWER IF YOU ARE NOT SURE***

1. \_\_\_\_\_\_\_\_\_\_\_\_\_ The Sun accounts for 99.86% of the mass of the solar system.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_ Over one million Earth’s could fit inside the Sun.
3. \_\_\_\_\_\_\_\_\_\_\_\_\_ The outer surface of the sun is shiny but the interior is in total darkness.
4. \_\_\_\_\_\_\_\_\_\_\_\_\_ The energy created by the Sun’s core is nuclear fusion.
5. \_\_\_\_\_\_\_\_\_\_\_\_\_ The name of the visible layer of the sun is called the photosphere.
6. \_\_\_\_\_\_\_\_\_\_\_\_\_ Different parts of the sun rotate at different speeds. The poles of the sun takes longer to rotate than the equator.
7. \_\_\_\_\_\_\_\_\_\_\_\_\_ The sun is 149.6 million miles from Earth (on average).

**BONUS QUESTION: HOW LONG DOES IT TAKE LIGHT TO TRAVEL TO EARTH?**

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**TOTAL VALUE 75 – HAVE A GREAT MARCH BREAK!**

**\*\*\*GIVE PROJECT TOPIC TO TEACHER ON/BEFORE FRIDAY, MARCH 1, 2019\*\***