**Astronomy Study Guide**

1. Fill out this chart of the movements of the Earth. (starts page 622 in book, also hanging up)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | What is it? | What does it cause? | How long does it take? | What if it stopped? |
| Rotation |  |  |  |  |
| Tilt of the Earth |  |  |  |  |
| Revolution |  |  |  |  |
| Precession |  |  |  |  |
| Nutation |  |  |  |  |

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the term referring to the spinning of Earth on its axis, while \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ refers to the way in which the Earth orbits around the Sun.

3. What Earth motion causes the north pole to point in different directions?

4. What is a barycenter? Do objects in space orbit around each other or around their barycenter? Draw a diagram showing where the Barycenter would be. (Hanging up)

5. The Earth is not a perfect sphere. What is the actual shape of the Earth, and what causes that shape? (Hanging up)

6. How does the tilt of the Earth cause seasons? How does the Earth’s orientation (tilt) towards or away from the Sun affect the seasons? (pg. 481)Draw a diagram of the Earth when it is summer in the Northern hemisphere. (Hanging up)

7. Ocean Tides are one way the Moon impacts the Earth. What are tides and how are they caused by the Moon? Which tides strongest? Which tides are weakest? (pg. 458-459)

8. a) How did the Universe start? (Hanging up and on page 720-721, 718-719)

 b) What is the name of the theory?

 c) When did it happen?

 d) Fill out the chart below to show the proof for this theory.

|  |  |  |
| --- | --- | --- |
| **Name of the Proof** | **What the proof is** | **Why it is proof** |
| **Red Shifts** |  |  |
| **Cosmic Background Radiation** |  |  |

9. A major piece of scientific evidence supporting the Big Bang theory is the fact that wavelengths of light from galaxies moving away from Earth are observed to be:

A. Shorter than normal (a red shift) C. Longer than normal (a red shift)

B. Shorter than normal (a blue shift) D. Longer than normal (a blue shift)

10. What is solar radiation and how does the Sun create its energy? (pg. 689)

11. The word “*nuclear*” means having to do with the nucleus of an atom. Use the word bank to complete the chart:

|  |  |  |  |
| --- | --- | --- | --- |
| ***type*** | ***how it works*** | ***where it takes place*** | ***how much energy released*** |
| **Nuclear Fusion** |  |  |  |
| **Nuclear Fission** |  |  |  |

Word Bank: tons of energy nuclear reactor on earth two atoms coming together

 one atom splitting tons of energy in the middle of a star\_\_\_\_\_\_\_\_

12. What is radiation and how is it different from conduction and convection? (pg. 485)

13. What are electromagnetic waves? What is the source of electromagnetic waves? (pg. 484)

14. How is the Earth protected from some of the more dangerous forms of electromagnetic energy released by the Sun? (Hanging up)

15. Explain how solar radiation warms the earth (seasons & latitudinal differences, p. 589 and 481).

16. Why are the North and South Poles colder than the Equator?

\_\_\_\_\_ 17. Locations in North Carolina are warmer in summer than in winter because in summer

A. The solar radiation reaching Earth’s surface is less intense, and the number of daylight hours is fewer

B. The solar radiation reaching Earth’s surface is less intense, and the number of daylight hours is greater

C. The solar radiation reaching Earth’s surface is more intense, and the number of daylight hours is fewer

D. The solar radiation reaching Earth’s surface is more intense, and the number of daylight hours is greater

18. What is photosynthesis (what does it do with sunlight?) and why do we need it for life on Earth? How does solar radiation make life possible? What happens to most sunlight during photosynthesis? (Pg. 433 and hanging up)

19. What is the correct order of cosmic objects from smallest to largest? ***Meteoroid, moon, planet, star, solar system, galaxy, universe***

20. The uneven heating of the Earth’s surface causes differences in temperatures resulting in which of the following?

A. Water and land heat at the same rate C. Water and land cool at the same rate

B. Water heats slower than land D. Water cools faster than land