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 **Unit 7: Vocabulary/Review (Space- Ch. 19, 20, & 21)**

1. Describe the motions of various celestial bodies and some effects of those motions.

2. Rotation:

3. Revolution:

4. Orbital Path:

 -Inertia:

 -Gravity:

5. Elliptical Path:

6. Gravitational Force:

 -Mass:

 -Distance:

7. Lunar phases:

8. Tides:

9. Explain how a light year can be used as a distance unit.

10. Describe the position and motion of our solar system in our galaxy

11. Dark Matter:

12. Dark Energy:

13. Stars:

14. Black Hole:

15. Galaxies:

16. Spiral Galaxy (Milky Way):

17. Solar System:

18. How old is the universe?

**How big are the following items?**

19. Solar System:

20. Milky Way:

21. Universe:

22. Describe how the Big Bang theory accounts for the formation of the universe.

23. Explain how observations of the cosmic microwave background have helped determine the age of the universe.

**Identify patterns in solar activities:**

24. Sunspot cycle:

25. Solar flares:

26. Solar wind:

**Relate events on the Sun to phenomena such as:**

27. Auroras:

28. Disruption of radio and satellite communications, and power grid disturbances:

29. Describe how nuclear fusion produces energy in the Sun.

30. Describe how nuclear fusion and other processes in stars have led to the formation of all the other chemical elements.

31. Explain the Hertzsprung-Russell (H-R) diagram.

32. Explain how an H-R diagram is used to find the distance of a star.

33. Explain how an H-R diagram can be used to find the temperature, life span, and mass of a star by its color.

34. Explain how the balance between fusion and gravity controls the evolution of a star (equilibrium).

35. Draw and label the life cycles of low, moderate, and high mass stars.

**E5.3 Earth History and Geologic Time**

The solar system formed from a nebular cloud of dust and gas 4.6 Ga (billion years ago). The Earth has changed through time and has been affected by both catastrophic (e.g., earthquakes, meteorite impacts, volcanoes) and gradual geologic events (e.g., plate movements, mountain building) as well as the effects of biological evolution (formation of an oxygen atmosphere). Geologic time can be determined through both relative and absolute dating.

E5.3A Explain how the solar system formed from a nebula of dust and gas in a spiral arm of the Milky Way Galaxy about 4.6 Ga (billion years ago).

E5.3B Describe the process of radioactive decay and explain how radioactive elements are used to date the rocks that contain them.

E5.3C Relate major events in the history of the Earth to the geologic time scale, including formation of the Earth, formation of an oxygen atmosphere, rise of life, Cretaceous-Tertiary (K-T) and Permian extinctions, and Pleistocene ice age.

E5.3D Describe how index fossils can be used to determine time sequence.

**E5.3x Geologic Dating**

Early methods of determining geologic time, such as the use of index fossils and stratigraphic principles, allowed for the relative dating of geological events. However, absolute dating was impossible until the discovery that certain radioactive isotopes in rocks have known decay rates, making it possible to determine how many years ago a given mineral or rock formed. Different kinds of radiometric dating techniques exist. Technique selection depends on the composition of the material to be dated, the age of the material, and the type of geologic event that affected the material.

E5.3e Determine the approximate age of a sample, when given the half-life of a radioactive substance (in graph or tabular form) along with the ratio of daughter to parent substances present in the sample.

E5.3f Explain why C-14 can be used to date a 40,000 year old tree, but U-Pb cannot.

E5.3g Identify a sequence of geologic events using relative-age dating principles.