Day: _____ Date: _____

Q:- Explain the formation of lunar-Eclipse.

Answer: An eclipse takes place when one heavenly body such as moon or planets moves into the shadow of another hesvenly body.

A lunar eclipse is formed, the moon moves in an orbit around Earth, and at the same time, Earth orbits the sun. Sometimes Earth moves between the sun and the moon. When this happens, Earth blocks the sunlight that normally is reflected by the moon. Instead of light hitting the moon's surface, Earth's shadow falls on it, it forms the lunar-eclipse. In this way lunar eclipse is formed. It can only occur when the moon is full.

Qno2:- Explain the terms Dark Energy and Dark Matter.

Dark Energy:

Dark energy is the name given to the mysterious force that's causing the rate of expansion of our universe to accelerate over time, rather than to slow down. It is a property of space itself.

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Day: _____ Date: _____

Dark energy is a new kind of dynamical energy fluid or field, something that fills all of space but something whose effect on the expansion of the universe is the opposite of that of matter and normal energy.

Dark Matter :-

Dark matter is composed of particles that do not absorb, reflect, or emit light, so they can not be detected by observing electromagnetic radiation. Dark matter is material that cannot be seen directly.

Dark matter exists because of the effect it has an objects that could be observed directly. Scientists have discovered dark matter around galaxies that existed about 12 billion years ago, the earliest detection yet of this mysterious substance that dominates the universe.

Day: _____ Date: _____

Q:- Define the term Black Hole. What's expected inside it?

Black Hole:-

A Black Hole is a massive object in space that is so dense that within a certain radius, it's gravitational field does not let anything escape from it, not even light.

Inside black hole is expected, Black holes have two parts. There is the event horizon, which could be thought as the surface, though it's simply the point where the gravity gets too strong for anything to escape. And then, at the center, is the singularity. That's used to describe a point that is infinitely small and infinitely dense.

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Day: _____ Date: _____

Differentiate between a star and a planet.

Star	Planet
① Star is a massive shining sphere of hot gas.	① Planet is a round body in space that orbits a star.
② A star shines by releasing light produced by nuclear fusion.	② Planets do not produce light.
③ Different heavenly objects revolve around star such as planet, dwarf planet, asteroid etc.	③ objects that revolve around planets are called satellites.
④ Star have very high temperature like sun has a surface temperature of 5500 to 6000°C.	④ Planets drive energy and heat from sun, therefore, the ones near to sun are hotter.
⑤ Stars revolve around the centre of their galaxy.	⑤ Planets revolve around star.
Example: Sun, Proxima-Centauri, Antares, pistol star.	Example: Earth, Venus, Mars, Jupiter etc.

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Day: _____ Date: _____

What is the magnitude of a star and how the color of stars is correlated with their temperatures?

Answer:

Magnitude, in astronomy, measure of the brightness of a star or other celestial body. The brighter the object, the lower the number assigned as a magnitude.

Magnitude of star could be found as:

$$Mv = m - 2.5 \log [(d/10)^2]$$

A star's color provides a direct measurement of its surface temperature, the hottest stars shine blue-white, while the coolest are dull orange or red. In turn, the temperature indicates how much energy a given area of the star's surface radiates into space every second.

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