

Assignment of General Science.

Q1 Scientific evidence of the Big Bang.

In start our universe temperature is too high because its density is too high.

Our universe expands its temperature flow so then after 400,000 years of the universe. the electrons and protons are combined into atoms and combination of electrons and protons and photons Light is flow freely this is the transition from plasma to gases in big bang.

In 1965, Arno Penzias and Robert Wilson they were work on microwave antenna they noble prize in this work.

Cosmic Background Radiation.

when our universe temperature high and also density then the atoms are not created and electrons and protons flow freely. and Light of photon can not escape and can't move on that time our universe is (opaque) means plasma type. Nucleosynthesis, (Lithium, helium, beryllium deuterium) big bang predicts that what their fractions on universe expand and its temperature is cold, Carbon, Nitrogen, Oxygen they made

in stars. But big bang predicts that our universe has 75% hydrogen and helium and other elements are 1%.

Q:2 What is the possible shape of the universe?

Ans Possibly flat like a sheet of paper, closed like a sphere, or opens like a saddle.
(Theory of general relativity.)

Q:3 What is planetary nebula?

Ans A planetary nebula is a glowing cloud of gas created when a star like the sun sheds its outer layers as it nears the end of its life.

The gas expands outward and shines brightly forming a colorful shell around the ~~sun~~ dying star.

Q:4 What is Oort cloud?

Ans The Oort cloud is a vast, spherical region of icy objects that surrounds our solar system far beyond the planets.

It contains remnants from the early solar system and serves as the source of long-period comets.

Q:5 What is Kuiper Belt?

Ans The Kuiper Belt is a huge, icy areas in space just beyond the orbit of Neptune the outermost planet in our system.

Imagine it as a big ring of ice and rocks floating around the sun. It's where many small objects, including some dwarf planets, are found. This area is important because it's where some comets come from, and it helps scientists to understand how our solar system formed and evolved.

Q:6 Asteroid Bennu: Asteroid Bennu is a small rocky object in space that orbits the sun, similar to other asteroids.

It's about 500 meters (1,640 feet) wide, which is roughly the size of a small mountain. Bennu is particularly interesting because it's a near-Earth asteroid meaning its path come close to earth's orbit.

Q:7 Satellite galaxy:

Ans These less massive galaxies have their own impressive collection of stars, which all orbit their own center, but the galaxies and everything in them orbit our galaxy too. It's as if our galaxy is the sun and those other galaxies are planets. Astronomers call them "satellite galaxies".

Q:8 Which planets in space are good for survival?

Ans Earth is the only celestial body known for sure to have generated living beings and thus the only current example of a habitable planet.

Q:9 What are polar lights?

Ans Polar Lights (aurora polaris) are a natural phenomenon found in both the northern and southern hemispheres. It is a natural light display in Earth's sky, predominantly seen in high-latitude regions. Auroras display dynamic patterns of brilliant lights that appear as curtains, rays, spirals, or dynamic flickers covering the entire sky.

Q:10 What are impacts of solar winds?

Ans Solar wind is continual stream of protons and electrons from the sun's atmosphere. When the solar wind reaches Earth it sends a flurry of charged particles into the magnetosphere and along Earth's magnetic field lines, towards the poles.

The interaction of these particles with Earth's atmosphere can produce glowing aurora display above polar regions.

Q:11 Structure of Earth:

Ans The earth is made up of three different layers: the crust, the mantle and the core.

→ The Crust:

The crust is the outside layer of the earth and is made of solid rock, mostly basalt and granite. There are two types of crust.

Oceanic crust and continental crust.

Oceanic crust: Oceanic crust is denser and thinner and mainly composed of basalt.

Continental Crust: Continental crust is less denser thicker, and mainly composed of granite.

→ The Mantle: The mantle lies below the crust and is up to 2900 km thick. It consists of hot, dense, iron and magnesium-rich solid rock. The crust and the upper part of the mantle make up the Lithosphere, which is broken into plates, both large and small.

→ The Core: The core is the centre of the earth and is made up of two parts: The liquid outer core and solid inner core. The outer core is made of nickel, iron and molten rock. Temperatures here can reach up to 50,000 C.

Q: 12 What are Tectonic Plates?

Ans Tectonic plates are gigantic pieces of the Earth's crust and uppermost mantle.

They are made up of oceanic crust and continental crust. earthquakes occur around mid-ocean ridges and the large faults which marks the edges of the plates.

Q:13 What is Tectonic plates boundary?

Ans A tectonic plate boundary is the border between two plates. The tectonic plates slowly and constantly move but in many different directions. Some are moving towards each other, some are moving apart, and some are grinding past each other.

Types of Plate Boundaries:

The study of plate boundaries and their motion is like figuring out a constantly moving jigsaw puzzle.

There are three types of plate boundaries.

1. Convergent Boundary:

Convergent boundary occurs when two tectonic plates and a continental plate collide, the ocean plate slides under the continental plate and bends downward.

2. Divergent Boundary:-

A divergent margin occurs when two plates are spreading apart, as at seafloor ridges or continental rift zones such as the East Africa Rift.

Molten rock rises from the Earth's center to fill the gap.

3. Transform Boundary: Transform margins mark slip-sliding plates such as California's San Andreas fault. The San Andreas fault marks the location where the North America and Pacific plates grind past each other in a horizontal motion. The plates do not slide smoothly, but build tension and release it in the form of an earthquake.

Q:14 Can earthquakes be predicted?

Ans No earthquakes cannot be predicted with 100 percent certainty.

Q: How are earthquakes caused?

Ans An earthquake is caused by a sudden slip on a fault. The tectonic plates are always slowly moving, but they get stuck at their edges due to friction.

When the stress on the edge overcomes the friction, there is an earthquake that releases energy in waves that travel through the earth's crust and cause the shaking that we feel.

Q:15 What is the difference between magnitude and intensity of an earthquake?

Ans Magnitude: is a measure of earthquake size and remains unchanged with distance from the earthquake.

Intensity: describes the degree of shaking caused by an earthquake at a given place and decreases with distance from the earthquake epicentre.

Q:16 What is the difference between an ozone hole and ozone depletion?

Ans Ozone hole: The thinning of ozone layer in stratosphere over Antarctica due to ozone layer depletion caused by several anthropogenic process is called ozone hole.

Ozone depletion: gradual thinning of Earth's ozone layer in the upper atmosphere caused by the release of chemical compounds containing gaseous chlorine or bromine from industry and other human activities.