

Q#3

A. Global warming is a wild beast and we all are poking at it with sticks. Justify

1. Introduction;

Global warming is one of the serious challenge faced by humanity. However, the global community is not taking sufficient efforts to tackle it due to their national interest and unwillingness to reduce emission of hydrocarbons. Therefore this wild beast is being poking at with sticks only. There are many devastating impacts of global warming such as melting of glaciers and floods etc.

2. Global Warming as a Wild Beast:

Global warming or a significant rise in Earth's temperature is termed a wild beast due to its fatal repercussions on human beings and Earth's natural resources. It is eating not only lives of people like a beast, but also causing depletion of natural resources on Earth.

3. Negative Impacts of Global Warming

Global warming is negatively impacting earth in many ways. It causes earth temperature rise i.e. it has already reached 1.5°C - the scientists.

are worried that the temperature will reach to 2C and so it needs to be mitigated.

4. Melting of Glaciers and Resultant Floods:

Global warming causes melting of glaciers which leads to excessive water in sea. The rising sea-level results in floods. One of the devastating example of floods is Pakistani flood 2022 which caused \$40 billion loss.

5. Efforts taken by Global Community to Reduce Global warming

Although, global warming is a wild beast, yet we are only poking at it with sticks. The largest emitters of toxic gases which cause global warming are US, China, India and other industrialized countries. However, they are not ready to meet the conditions decided in COP meetings.

6. Minor-steps are taken by Major Contributors:

This can be seen from the failure of any constructive results from COP27 - in which Russia and India together with China denial to agree on carbon-phase-out proposal. Therefore, it can be concluded

that we as a responsible humans should not poke at the wild bear with sticks.

b. What is the origin of universe, how age of universe can be calculated?

1 Introduction:

Universe is refer to cosmic vast area consisting of everything around and above us. The origin of the universe is draw back in Big Bang theory - according to it the age of the universe is 13.8 billion years. The age of the universe is calculated by scientist: they use different methods. One of the method of calculation is measurement of the rate of expansion of the universe. The other is looking for the oldest star and by studying cosmic radiation microwave etc.

2. An Overview of the Universe

Universe refers to everything that exists. It encompasses matter, energy, time, space galaxies, planets, stars etc. The universe is a vast cosmic playground waiting to be explored. There are many theories on the origin of the universe one accepted is Big bang theory.

3. Origin of the Universe:

The origin of the universe is believed to be in Big-Bang theory. According to it, the universe began as a hot, dense and small point called singularity. Then about 13.8 billion years ago it started expanding rapidly. This expansion led to the formation of galaxy, stars etc.

4. Calculation of the Age of Universe:

Following are some of the important and well recognized methods of calculating age of the universe:

5. Measuring Rate of Expansion of the Universe:

This method is known as Hubble constant which measure expansion rate, and then work backward to determine when expansion began. It draw relationship between distance and velocity of nearby galaxies.

6. By looking for the Oldest Stars:

Another way of calculating age of the universe is by looking for the oldest stars. The life cycle

of a star depends on its mass.
The bigger the star, the more chances
of supernova are there.

6. By Studying the Cosmic Microwave Radiation:

Under this way radiation is analyzed. This radiation in background is leftover radiation from the early stages of the universe.

7. Conclusion:

To sum it all, the origin of the universe is defined by Big Bang theory. The age of universe is approximately 13.8 billion years. It is calculated through various methods used by scientists.

C. Write a Short Note on Semiconductors.

1. Science of Semiconductors:

Semiconductors are small chips or materials that have properties between those of conductors (which conduct electricity) and insulators (which resist electricity).

2. Usage of Semiconductors:

Semiconductors are used in a variety of electronic

devices. For example, semiconductors are necessary for transistors and integrated circuits.

Moreover, digital gadgets like cellphones, laptop, surveillance etc. are also require semiconductors.

3. Control Electrical Current:

At the same time, semiconductors allow electricity currents and control electrical current which make it unique. Without them our digital gadgets would not work. They allow processing, storage and transmission of data.

4. America-China war on Semiconductors:

These small chips are very crucial. Both powerful countries US and China are competing to lead the supply-chain of semiconductors. For instance, trade war is being carried out by US and China. Will America banned any export of semiconductor related technology to China.

5. Composition of Semiconductors:

They are made of rare earth elements including silicon and germanium. These materials are unique.

d. What is eclipse? Distinguish between solar and lunar eclipse.

1. Introduction:

An eclipse is an astronomical event that occurs when any of the three involving bodies is passed by in orbital path. It involves, the earth, the moon and the sun - the alignment of these bodies is known as syzygy. The major difference between solar and lunar eclipse is that solar eclipse occurs when moon pass by earth and sun obstruct the light from reaching the earth and lunar eclipse when the earth comes between both.

2. Understanding Eclipse:

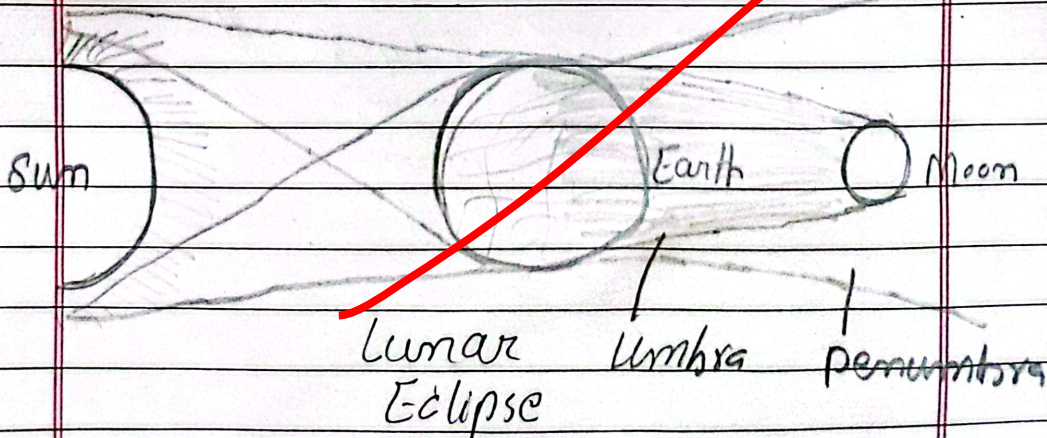
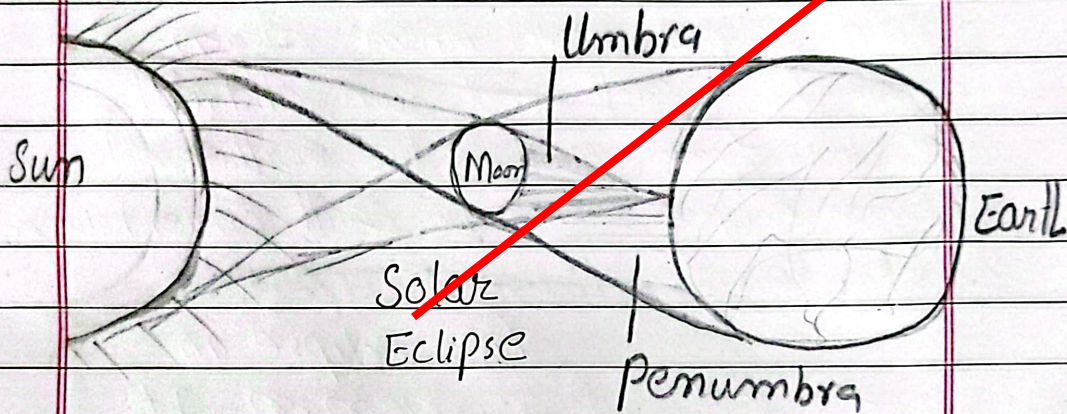
An eclipse is a natural phenomenon. It occurs between three cosmic bodies including the Earth, sun and moon. During the occurrence of eclipse the shadow is cast on the earth and darkness is observed. Similarly, when there is solar eclipse there is darkness above the moon. An eclipse caused due to gravitational orbit of the

involving bodies.

3. Difference between Lunar and Solar Eclipse

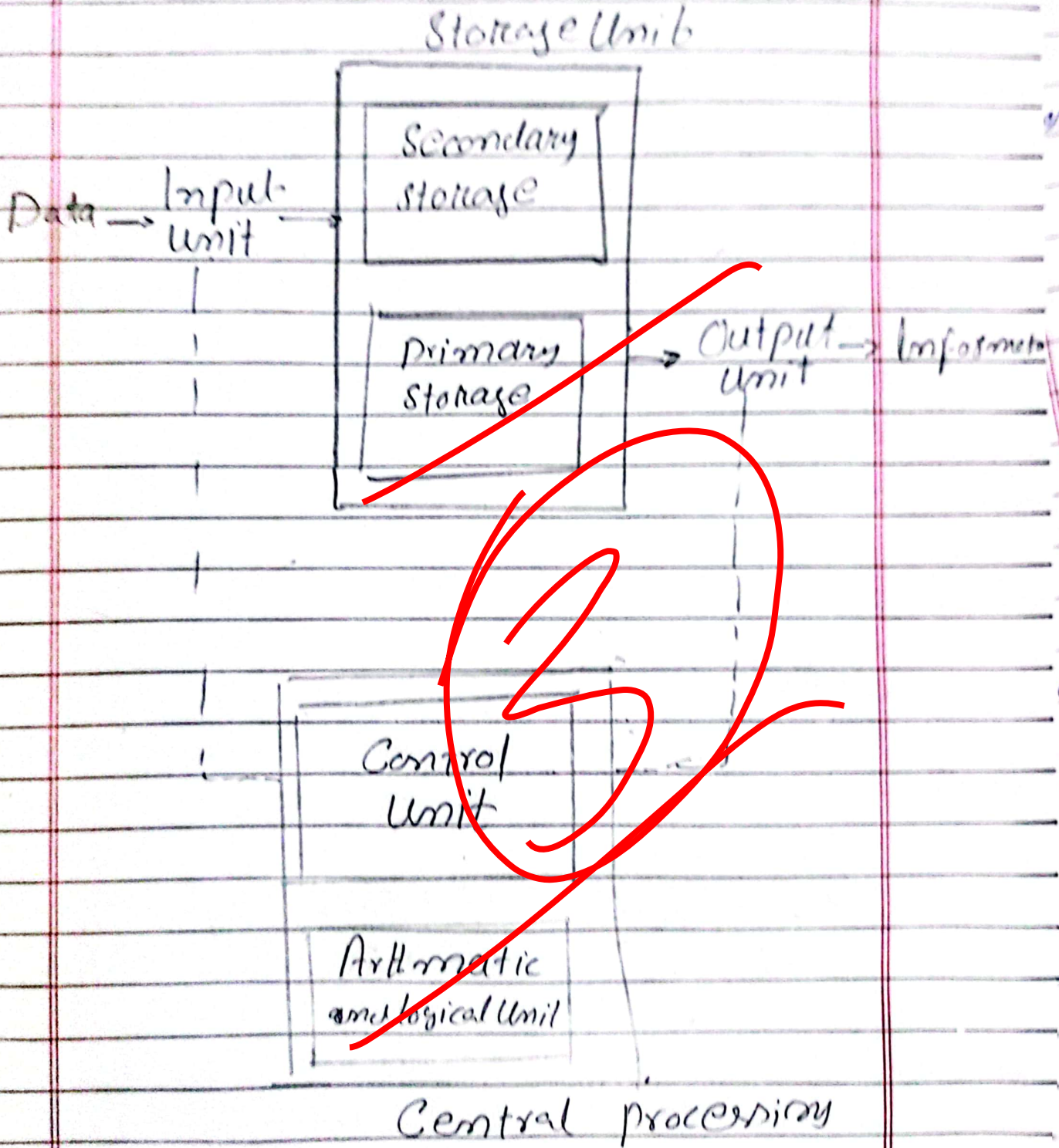
The difference bet. between solar and lunar eclipse is that during the former the moon comes between the earth and the sun while in later the earth comes between sun and moon.

During solar eclipse the sky will darken, while during lunar eclipse moon will be covered by shadows.



Q5 Draw a block diagram of input and output devices of computer

Ans



b. Define Optics. How does an optical fiber work?

1. Definition of Optics:

Optics is a branch of Physics that deals with the science of light.

It explores how light interacts with matter—how it travels and how it can be manipulated.

2.

Scope of Optics:

It involves a wide range of phenomenon such as:

reflection

refraction

diffraction

interference etc.

⇒ Study of Lenses

⇒ Study of mirrors

⇒ Study of prisms etc.

3. Principal working of Optical Fiber:

Optical fiber use the principle of total internal reflection to transmit light signals over a long distance.

4. Composition of Fibre Optics:

An optical fibre is

made up of glass or plastic called optical fiber. It is a thin flexible strand with a core in the center surrounded by a cladding layer.

5. How light signals undergoes total internal reflection;

When a light signal introduced in inner core of the fiber it undergoes total internal reflection.

— The light rays bounce off between the core and cladding continuously reflecting back into the core as they travel—

6. Usage of Optical Fiber:

An optical fiber is used in following applications:

- Telecommunications
- Internet
- Endoscopy or Medical
- Electronic sensors
- Audio video transmission

c Discuss different methods of Solid Waste Management

1. Intro: Solid waste management refers to the process of treating solid waste. The reason behind it is to save environment from pollution. Following are some of the methods of it.

2. Methods of Solid Waste Management:

It can be done in a number of ways. However, some effective methods of solid waste management are discussed below:

3. Recycling:

It involves collecting of solid waste and processing it in such a way that it can be used again. For instance, making vase out of plastic bottles.

4. Reducing Source of Waste:

Another effective method in reduction of the source of solid waste. This strategy is very useful. The world has been working on it. For example, plastic going-out

campaign which hampered the use of shoppers etc.

5. Landfilling:

When waste can not be recycled or reduce, the best method for solid waste management is disposition of it in landfills. In present time, modern landfills are designed to reduce impacts (harmful) of solid waste volume.

6. Conservation of Waste-to Energy:

Last but not the least, one of the efficient methods of solid waste is turning it into energy. It can be done by the process of incineration. It helps to generate electricity or heat out of the solid waste. In many cities this method is proved helpful in Pakistan. For example, in Sukkur, since thousands of the tonnes of waste has been gathered in side areas to conserve it. Therefore, it can be concluded that solid waste management can be done in various ways.

d. Distinguish GPS and GIS

Ans

Global Positioning System

It is a digital system that helps in finding location, distance and position of any area or a person

Focus on location

Tells where are you on Earth

Satellite-based navigation system

Geographic Information System

It is a powerful tool that combines geography, data and technology to analyse information on the Earth

Analyze data

Helps you to understand the data related to that location

Software tool allow to visualize geographic data

Q.8

d. 15, 15, 16, 16, 16, 17, 17, 18, 19

Find mean median mode
and range

Ans

19 is mode

~~15, 16, 17, 18, 19~~

Ans

~~17 is Median~~

~~15, 15, 16, 16, 16, 17, 17, 18, 19~~

Ans

~~Average: $\frac{149}{9} = 132.1111$~~

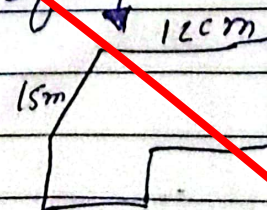
Ans

~~132.111 is Mean~~

C

Ans

180 is the area of



27 is the perimeter.