LMS ID
36101

NAME: HARIS KHAN (1) BATCH: 378

PART-II

SECTION-I

QUESTION-2 2. -(a)

LIPIDS

"Lipids are diverse group of organic compounds that are water soluble or partially soluable in water"

COMPOSITION:

They are primarily made up of carbon, hydrogen and oxygen.

FUNCTIONS:

1: Responsible for storing energy.

2: Essential in the formation of cell membrane.

3: Also serve as signaling molecules.

TYPES

1: FATS: (Triglycerides)

They are composed of glycerol and three fatty acids.

Functions:

a. Store Energy

b. Provide insulation &

c. Protect organs.

2: PHOSPHOLIPIDS

They are composed of glycerol and two fatty acids.

Functions:

A major component of cell membranes.

Responsible for forming Bilayers that protect cells and regulate the passage of substances.

QUESTION-NO-2

Part-B

ENERGY CONSERVATION

Following are few measures for energy conservation and it's sustainable use, which can help reduce energy waste, lower costs, and ensure a sustainable energy future.

1: **USE OF ENERGY-EFFICIENT APPLIANCES:**

Opting for energy-efficient appliances like LED bulbs and energy-saving HAVC systems reduce overall energy consumption.

2: **PROPER BUILDING INSULATION:**

Insulated homes retain heat in winter and cool air in summer, minimizing energy use for heating and cooling.

3: **ADAPTING RENEWABLE ENERGY SOURCES:**

Switching to wind, solar and hydro-electeric power reduces reliance on fossile fuels and promote sustainability.

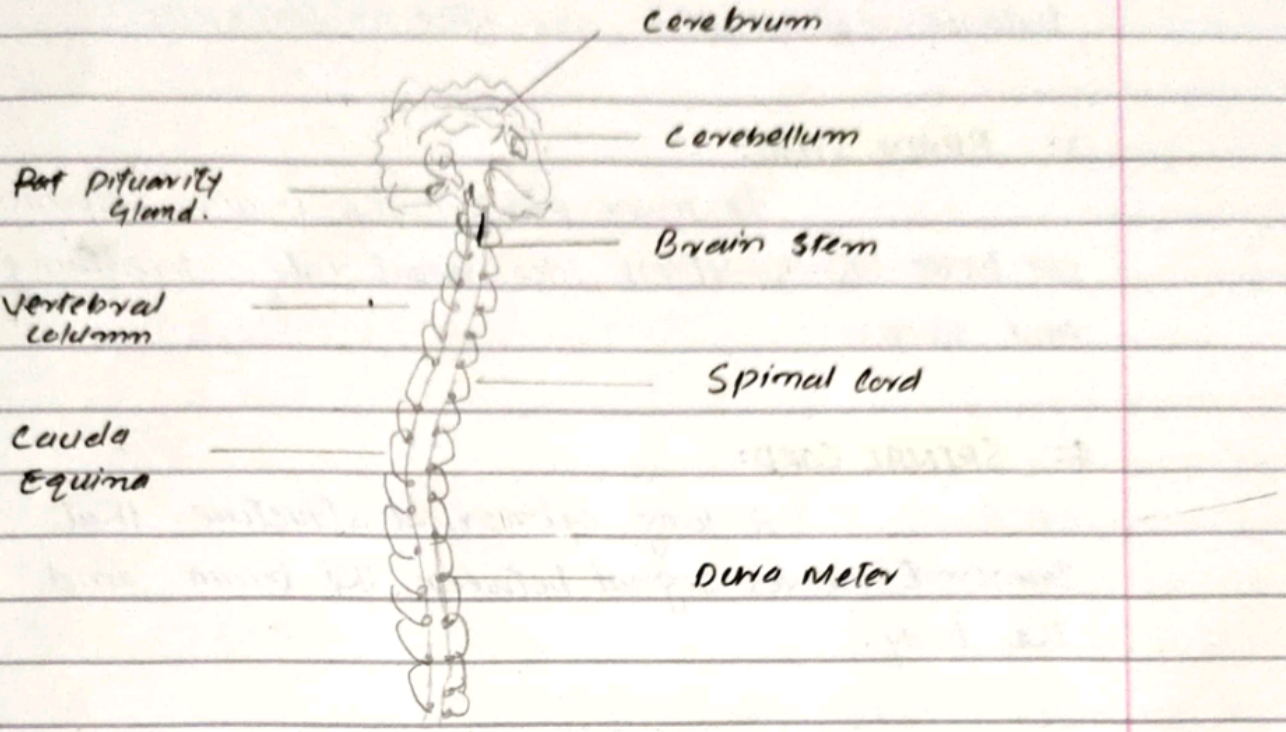
4: **PUBLIC TRANSPORT & CARPOOLING:**

Reduces energy consumption in the transportation, lower fuel use, and decrease emissions.

OTHER MEASURES:

Energy Management system
Efficient ~~Lightening~~ Lighting
Energy related awareness.

QOUESTIO N. 2 Part (b)



NERVOUS SYSTEM:

The nervous system is a complex of cells and tissues that transmit electrical signals throughout the body, enabling communication between the brain, spinal cord, and other organs, and coordinating bodily functions such as movement sensation and thought. ||

FUNCTIONS:

It is responsible for controlling and regulating various physiological processes and responding to external stimuli.

PARTS/ORANS OF NERVOUS SYSTEM:

1: **CEREBRUM:**

It is the longest part of the brain, responsible for sensory processing, reasoning, emotions, and voluntary movements.

2: **CEREBELLUM:**

A part of the brain that controls balance, coordination and some motor skills.

3: **BRAIN STEM:**

The lower part of the brain, responsible for basic life functions like heart rate, breathing and sleep.

4: **SPINAL CORD:**

A long cylindrical structure that transmit nerves signal between the brain and the body.

5: **PITUTARY GLAND**

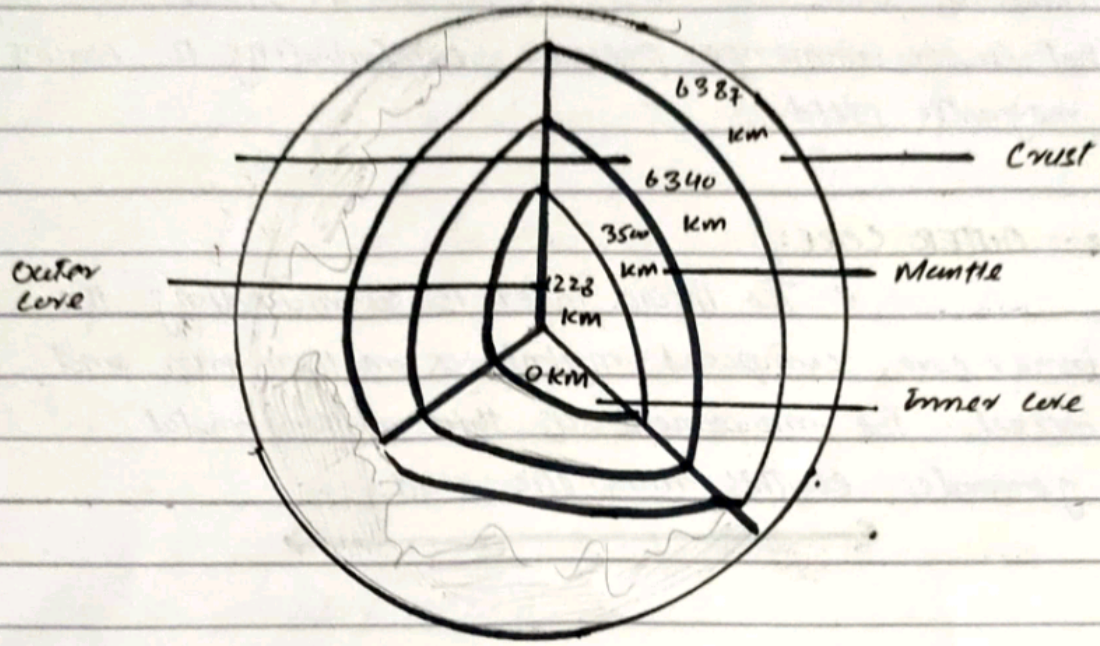
A small gland at the base of the brain that secretes hormones controlling various bodily functions.

6: **VERTEBRAL COLUMN:**

A body structure made up of ~~vertebral~~ vertebrae, protecting the spinal cord and supporting the body.

QUESTION No. 3 Part (a)

SUN and it's STRUCTURE



SUN:

Sun is a star at the centre of our solar system, composed mainly of hydrogen and helium. It produces energy through nuclear fusion, which empowers the solar system and support life on earth.

STRUCTURE:

1: CRUST:

It is the earth's outermost layer. It is composed of solid rocks and divided into tectonic plates and varies in thickness, being thinner under oceans and thicker under continents.

2: MANTLE:

Mantle is located beneath the crust. It is composed of semi-solid rocks that moves

slowly. It plays a key role in tectonic activity through convection current.

3: **INNER CORE:**

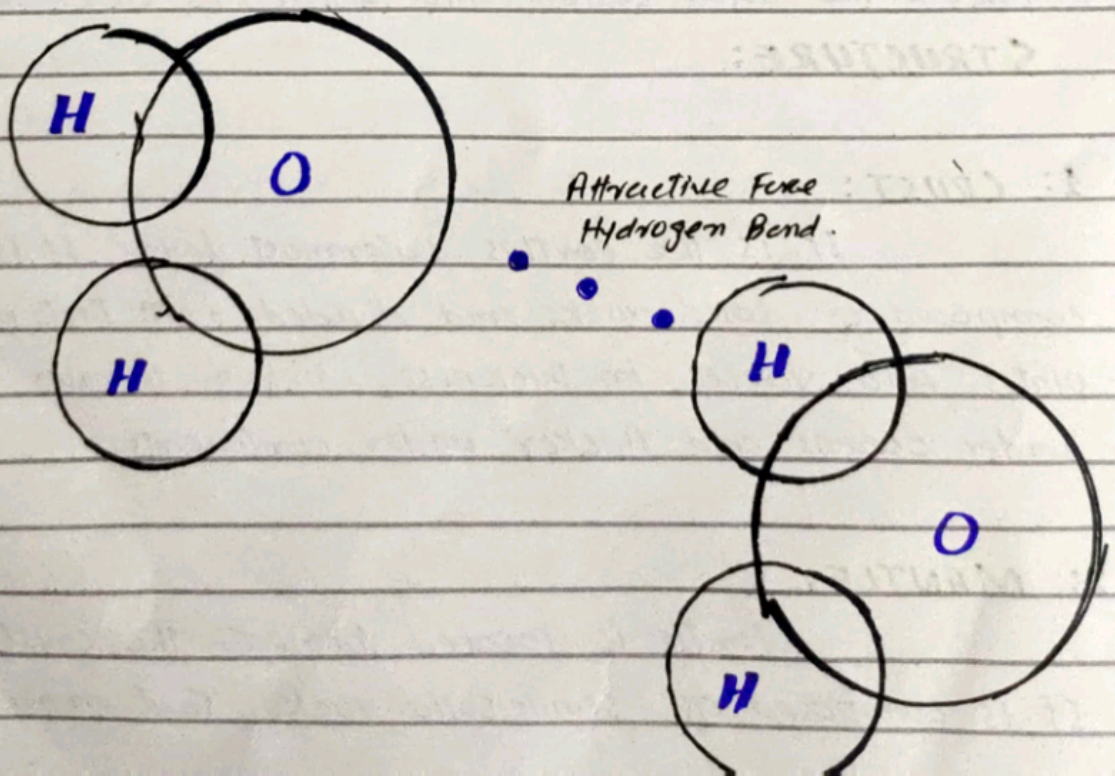
It is the earth's innermost layer, made of solid iron and nickele nicked. It is extremely hot under immense pressure, contributing to earth's megnatic field.

4: **OUTER CORE:**

The liquid layer is surrounding the inner core, composed mainly of molten iron and nickel. The movement of this molten metal generates earth's magnetic field.

QUESTION-2 Part (5) (C)

HYDROGEN BOND AND STRUCTURE



HYDROGEN BOND

A hydrogen bond is a weak attractive force between hydrogen atoms, which is covalently bonded to an electronegative atom (like oxygen and nitrogen) and another electronegative atom.
This bond occurs because the hydrogen atoms develop a partial positive charge, while the electronegative atom develops a partial negative charge.

STRUCTURE:

The structure of hydrogen bond involves the hydrogen atom being attracted to the lone pair of electrons on the electronegative atom, forming a bridge between two molecules or within different parts of the same molecule. Hydrogen bonds are crucial for ~~forming~~ / in the properties of water and the stability of DNA.

QUESTION No.3 Part (b)

TSUNAMI:

DEFINITION:

"A tsunami is a series of large ocean waves caused by the sudden displacement of water due to underwater earthquakes, volcanic eruptions, or landslides."

~~when~~ a

EXPLANTION:

When the tectonic plate shift beneath the ocean floor, it displaces a massive amount of water, generating waves that travel across the ocean at high speed. As the waves

approach shallow coastal areas, they slow down but increase in height, often causing devastating flooding.

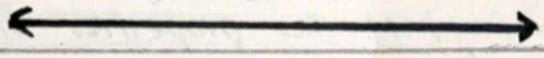
EXAMPLES OF TSUNAMI:

1: **INDIAN OCEAN TSUNAMI: 2004**

It was caused by a powerful earthquake near Sumatra which affected several countries and led to over 230,000 deaths.

2: **JAPAN TSUNAMI - 2011:**

It was triggered by a massive earthquake off the coast of Tohoku, which resulted in widespread destruction and loss of life.



QUESTION NO. 3 Part (C)

ENVIROMENTAL POLLUTION

Environmental pollution refers to the contamination of the natural environment by harmful substances, such as chemicals, wastes and pollutants, which adversely affect air, water, and soil quality. It is primarily caused by industrial activities, deforestation, urbanization, and the burning of fossil fuels.

HARMFUL EFFECTS:

1: **HEALTH ISSUES:**

Respiratory diseases, cancer and heart problems, due to air and water pollution.

2: **LOSS OF BIODIVESITY:**

- As pollutants harm wildlife and ecosystem.

3: **CLIMATE CHANGE:**

Climate change from the release of greenhouse gases, leading to global warming.

MEASURES TO CURB POLLUTION

1: **REDUCING EMMISSION:**

Reducing emissions through cleaner technologies and renewable energy sources like wind and solar power.

2: **PROMOTING CYCLING:**

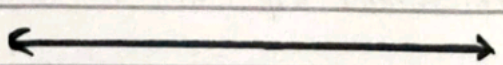
Promoting cycling and waste management to reduce landfill waste and environmental contamination.

3: **ENFORCING STRICTER REGULATION:**

stricter regulations on industrial and vehicle emissions.

4: **RAISING PUBLIC AWARNESS:**

Public awarness about sustainable practices like reducing plastic use and conserving resources.



QUESTION No.3 Part(d)

WIRELESS COMMUNICATION:

Wireless communication is the transfer of data or information between devices without physical connections, using electromagnetic waves like radio, microwaves or infrared.

TYPES OF WIRELESS COMMUNICATION:

It includes technologies like WiFi, Bluetooth, mobile networks (4G, 5G) and satellite communication, enabling data transfer over short and long distances.

WORKING OF A SATELLITE:

Satellite receive signals from earth, amplify them and retransmit the signals back to earth, enabling communication across vast distances.

SATELLITE COMMUNICTION PROCESS:

A satellite transponder receives, converts and retransmits signals at different frequencies to ensure clear communication between ground stations.

APPLICATIONS OF SATELLITE COMMUNICATION:

Satellites enable services like television broadcasting, GPS navigation, internet access, and global communication, especially in remote areas.

POWERING SATELLITE:

Satellites are powered primarily by solar panels that convert sunlight into electricity, allowing them to function in space.