

PART - USECTION - IQ No: 2Ans. LIPIDSa) Introduction:

Lipids are a diverse group of organic compounds which are insoluble in water but soluble in organic compounds or solvents. They are an essential part of cell structure and function, serving as energy storage molecules, components of cell membrane, and signaling molecules.

Major Types of Lipids:i) Triglycerides (fats and oils):

It is a such type of lipid which is composed of one glycerol molecule bonded to three fatty acid chains.

Function:

It provides long-term energy storage and also helps



to maintain body temperature. It act as a cushion for vital organs.

### ii) Phospholipids:

It is composed of a glycerol backbone, two fatty acids, and a phosphate group.

#### Function:

Form the lipid bilayers of cell membranes, providing structural integrity and controlling the movement of the substances in and out of the body.

### iii) Steroids:

Made up of four interconnected carbon rings with various functional groups. It helps in hormonal function.

### iv) Waxes:

Made up of long-chain fatty acids and alcohols.

It provides protection to plant and animal cell and also play barrier role.

### v) Glycolipids:

Lipids attached to carbohydrate groups.

It recognize cell-cell interaction and membrane stability.



(b)

Introduction:

Energy conservation is the process of using less energy consumption or using it more efficiently.

Measures for Energy Conservation and Sustainable Use:i) Promote Energy Efficiency:

Use energy efficient applications. Also use reduce heating and cooling energy requirements.

ii) Adopt Renewable Energy Sources:

Transition to solar energy, wind energy and hydropower to reduce dependence on fossil fuels.

iii) Encourage Public Transport:

to Promote buses, trains and use bicycles to reduce individual vehicle usage.

iv) Implement Smart Technology:

By shifting from non-renewable

DATE: 1 / 20

energy to use modern technology to meet the requirement

#### iv) Reduce Energy Waste:

Reduce energy waste by turn off lights and bulbs when not use it.

#### v) Educate and Create Awareness

Conduct public campaigns to highlight the importance of energy conservation.

(c)

#### Introduction:

Hydrogen bond is a weak type of chemical bond between hydrogen <sup>& electronegative</sup> atoms. It occurs covalently. They are attached in an electronegativity attraction.

Ex<sup>2</sup> - H-Cl.

#### Key Characteristics of Hydrogen Bond:

i) It forms between hydrogen



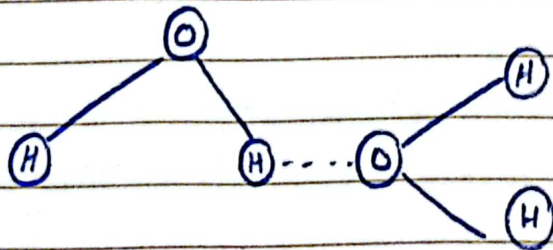
DATE: \_\_\_/\_\_\_/20\_\_\_

and highly electronegative atoms such as Oxygen, Nitrogen, ... etc.

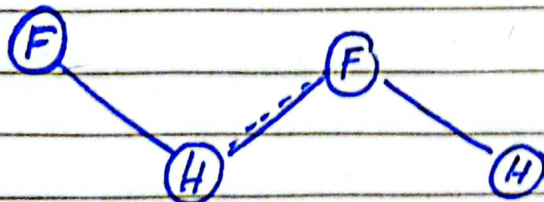
2) The electronegative atom pulls electrons away from hydrogen, giving it a partial positive charge which attracts the negative pole of another electronegative atom.

3) It is weak - than covalent bond

Ex:  $H_2O \cdots H_2O$ .



Hydrogen fluoride :



(d)

### Introduction:

Nervous system is a system that is a network of nerves and ~~arteries that take blood from body to brain~~ and it also ~~that~~ carry messages from brain to organ and organ to brain. When anything touch our body, the nerves carry message from organ to brain and brain realize and response it.

There are three main parts of nervous system.

#### 1) Central Nervous System:

It contains brain which controls centre for thoughts, emotions, memory and sensory processing. It contain cerebrum, cerebellum, and ~~the~~ midbrain. +  
It also contains spinal cord.

#### ii) Peripheral Nervous System:

It contains stomach nervous system which controls voluntary movements. It also have autonomous



DATE: \_\_\_/\_\_\_/20\_\_\_

nervous system which regulates involuntary actions.

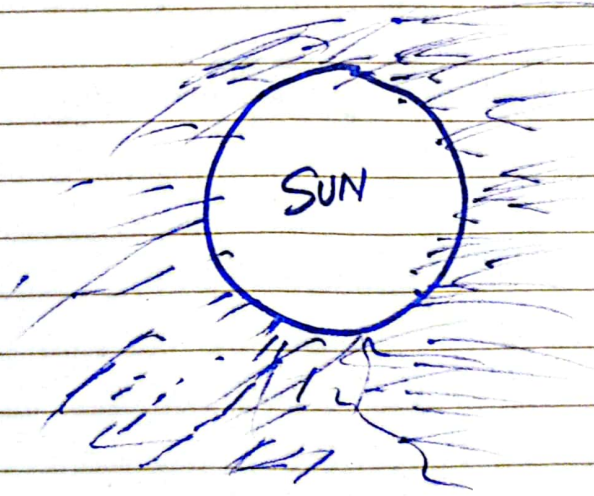
Q No: 3

Ans

A)

Introduction:

Sun is the source of energy which radiates heat energy. It is known to be the highest energy source.



(c)

Introduction:

It is the existence of harmful substances in the environment, causing adverse effects on ecosystems, human health and the planet as a whole.

It has following types:

- i) Air Pollution
- ii) Water pollution
- iii) Soil Pollution
- iv) Noise Pollution
- v) Light Pollution.

Harmful Effects of Environmental Pollution:

- 1) It effects on human health.
- 2) It worsens climate change.
- 3) It pollutes water.
- 4) It increases harmful gases in the atmosphere.
- 5) It can effect on agricultural product.

Measures to Curb it.

- 1) It can be mitigated by awareness.
- 2) ~~It~~ Transition from non-renewable energy to renewable energy.
- 3) Less use of public vehicles.



DATE: \_\_\_/\_\_\_/20\_\_\_

## SECTION - II

QNO: 06

Ans (a) Data

Sum of 3-digit number is 15.

Sum of 10<sup>th</sup> and unit digit is 12.

The difference of the unit digit from 10<sup>th</sup> digit = 0.  
What is the three-digit number?

Sol: ∴ Unit 10<sup>th</sup> 100<sup>th</sup>

$$\text{let: } x + y + z = 15 \text{ — (i)}$$

$$x + y = 12 \text{ — (ii)}$$

$$y - x = 0 \text{ — (iii)}$$

add eq: (ii) and (iii)

$$\begin{array}{r} x + y = 12 \\ -x + y = 0 \\ \hline \end{array}$$

$$2y = 12$$

$$y = \frac{12}{2}$$

$$y = 6 \text{ — (iv)}$$

Now put eq (iv) in eq (ii)

$$x + y = 12$$

$$\therefore y = 6$$

$$x + 6 = 12$$

$$x = 12 - 6$$

$$x = 6 \text{ — (v)}$$

Now put value of x and y into eq (i)

DATE: \_\_\_ / \_\_\_ / 20\_\_\_

$$x + y + z = 15$$

$$\therefore x = 5, \quad y = 7$$

$$5 + 7 + z = 15$$

$$z + 12 = 15$$

$$z = 15 - 12$$

$$z = 3$$

$\therefore$  Therefore the 3-digit number is **573** Ans.

(b)



DATE: \_\_\_/\_\_\_/20\_\_\_

(C)

Data

Diameter of circle = 6 cm

Circumference and area = ?

Sol:-

Circumference of Circle =  $2\pi r$

$\therefore r = \text{radius}$

$$r = \frac{d}{2}$$

$$r = \frac{6}{2} \Rightarrow 3$$

$\therefore r = 3$

Circumference =  $2\pi r$

$$\therefore \pi = 3.14$$

$$= 2(3.14)(3)$$

$$= 6(3.14)$$

$$\boxed{\text{Circumference} = 18.84 \text{ cm}}$$

Area of circle =  $\pi r^2$

$$\therefore \pi = 3.14$$

$$r = 3$$

$$\text{Area of circle} = 3.14 (3)^2$$

$$= 3.14 (9)$$

$$\boxed{\text{Area of circle} = 28.26}$$

Therefore, Circumference of circle is 18.84 cm and its area is 28.26 cm Ans

DATE: \_\_\_/\_\_\_/20\_\_\_

(d)

i) 13, 24, 46, 90, 178, —

Sol.

$$13$$

$$24 \Rightarrow 24 - 13 = 11$$

$$46 \Rightarrow 46 - 24 = 22$$

$$90 \Rightarrow 90 - 46 = 44$$

$$178 \Rightarrow 178 - 90 = 88$$

$$354 \Rightarrow 354 - 178 = 176$$

∴ For Each <sup>consecutive</sup> term's difference is multiply by 2. therefore the missing number is 354

Ans

ii) 5, 6, 9, 14, 21, —

Sol.

$$5$$

$$6 \Rightarrow 6 - 5 = 1$$

$$9 \Rightarrow 9 - 6 = 3$$

$$14 \Rightarrow 14 - 9 = 5$$

$$21 \Rightarrow 21 - 14 = 7$$

$$30 \Rightarrow 30 - 21 = 9$$

Each next term's difference is added by 2, thus the missing no is.

30  
Ans.



Q No: 8

Ans: (a)

Data:

Width = 60% of its length.

Length = 15 ft.

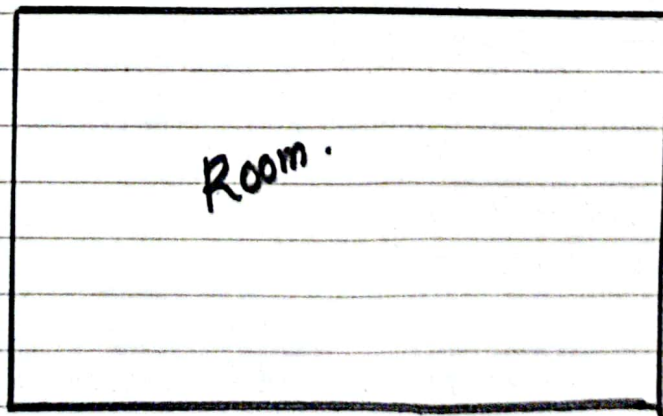
Room's dimensions?

Sol:-

$$\text{Width} = \frac{60}{100} \times 15$$

$$\text{Width} = \frac{6 \times 3}{2} = \frac{18}{2}$$

$$\text{Width} = 9 \text{ ft.}$$



Length = 15 ft

Width = 9 ft

Therefore, the dimension of room will be rectangular. Ans.

DATE:    /    / 20

Data: (b)

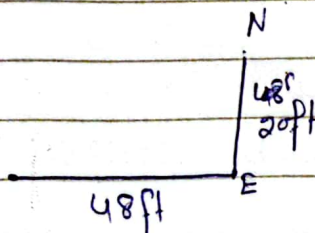
Dog Park -

Vena ran 48 ft East

Ran 20 ft North

Sol.:

If she would  
have ran in  
straight line.



Total distance

$$48 + 20 = 68 \text{ ft.}$$

Therefore, her total distance is 68ft  
and she would run from starting  
point if would have run in straight  
direction.

Ans



DATE: \_\_\_/\_\_\_/20\_\_\_

(c)

Data

Average marks of 40 student = 50.15.

Marks of a student were taken 49, instead of 85.

New average marks of class = ?

Sol: -

$$40 = 50.15$$

$$\therefore 85 - 49 = 36$$

$$40 \times 50.15 = 2086 - 36$$

$$= 2050$$

Now Average of 40 students:

$$\text{Average} = \frac{2050}{40} = 51.25$$

So, the new average will be 51.25 Ans

(d)

Data:

~~Total people = 37.~~

37 people like vegetable Pizza.

25 like chicken Pizza.

3 like neither.

Probability of chicken Pizza:

Sol: - Total people = 37 + 25 + 3 = 65 people.

$$\therefore \text{Probability} = \frac{\text{Part}}{\text{Total}}$$

$$\text{Probability} = \frac{25}{65} \Rightarrow 0.38$$

Thus the probability of chicken Pizza is 0.38 Ans.