Q No 3 :-

a) proteins :-

Greek word protius which mean "substance of first importance". proteins are large biomolecules made up of amino acids linked by peptide bonds. They are essential for growth, repair, and enzyme production in the body.

Digestion :-

In Stomach Bepsotein are broken down into smaller peptids by the enzyme pepsin in the acidic environment.

In Small Intestine enzyme like trypsin and Chymotrypsin further break peptides into smaller peptides. Peptidases break them into individual amino acid, which are absorb into the blood stream.

Carbohydrate :-

Carbo mean Carbon & hydrate mean water. Carbohydrate are organic compounds mainly composed of Carbon, hydrogen & oxygen, serving as the body's primary energy source. They are composed of sugars like monosaccharides, disaccharides and polysaccharides.

Digestion:

In Mouth Salivary enzyme amylas begins breaking down starch into maltose. In Small intestine pancreatic amylase continues starch digestion, and enzyme like maltase, lactase and sucrase break disaccharides into monosaccharides (glucose) which are absorbe into the bloodstream.

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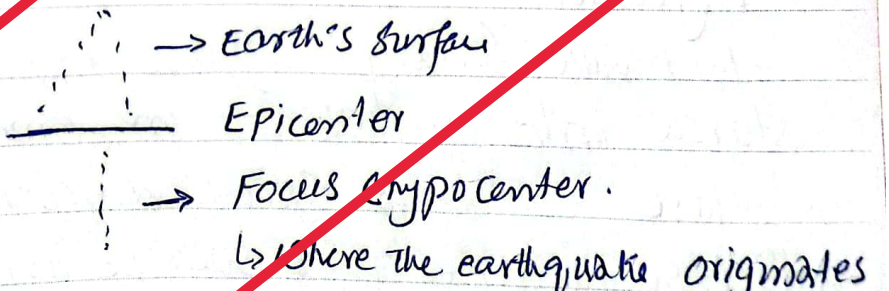
b)

Atmospheric pressure:- The force exerted by the weight of the air above a given surface area. measure in unit like pascals or millibars.

Temprature:- The measure of the avrage kinetic energy of air molecules, indicating how hot or cold the atmosphere. It measured in degree Celsius (°C), Fahrenheit (°F) or Kelvin(K).

Humidity:- The amount of water vapor present in the air. It can be expressed as absolute humidity or relative humidity. Absolute humidity mean mass of water vapor in a volume of air. Relative humidity mean percentage of water vapor relative to the Air capcity.

c) Epicenter of Earthquake:- The epicenter is the point on the earth's surface directly above where the earthquake originated, known as the focus or hypocenter. The Earthquake's Seismic waves radiate out from the focus and the epicenter is where the impact is often felt most strongly.



d) RADAR:-

RADAR Stand for Radio detection and ranging. Radar is a system that uses radio waves to detect and locate object, measure their speed and determin distance.

Working of Radar:-

Through an anteena radar system emits a pulse of radio waves (electromagnetic). These radio wave travels through the air, and when they hit an object (e.g airplane, weather formation) they bounce back. The radar anteena then received the reflected waves (echo). The time taken for the radiowaves to return is used to calculate the distance to the object. The frequency shift (Doppler effect) can determine the object speed Key component are used as, Transmatter, Receiver anteena, Signal Process

Add more headings
Add diagrams
Charts
And improve content information
Furthermore, follow step by step problem solving method for maths

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Q4.

a) Solar System:-

The Solar System is a collection of celestial bodies, including the Sun and all objects that are gravitationally bound to it. These include planets, moon, asteroids, comets, dwarf planets and other space debris

Components of Solar System:-

① Sun:-

A Star at the center of the Solar System, provide light and energy to all its objects.

② planets:-

Eight major planets orbit the Sun, which are devide into two groups:

(i) Terrestrial planets (Mercury, venus, Earth, Mars) these are rocky & closer to the Sun

(ii) Gas gaint (Jupiter & Saturn) and ice gaint (Uranus & Neptune) these are large more distant, and made mostly of gas and ice.

③ Moon:-

Natural Satellites that orbit planets. Earth's moon is an example.

④ Asteroids:-

Small rocky bodies, mostly found in the Asteroids belt between Mars & Jupiter.

⑤ Comets:-

Ice body that develop tail when they approach the Sun

b) Pituitary gland:- It is a small, pea sized organ located at the base of the brain and is often called the "master gland" because it regulate the function of other endocrine glands.

Importance of pituitary gland:-
- It produce key harmone that control growth, metabolism, reproduction and stress response For example, it secretes:
Growth Harmone → Stimulat growth & cell repair
Thyroid-Stimulating Harmone → Regulate thyroid function.
Prolactin → Stimulate milk production after child birth. etc
- It control the thyroid, adernal glands, ovaries, and tastes throug the harmone it secretes.
- It play an important role in the growth and development of the body, influencing physical & sexual maturation.

Disruption in pituitary gland function can lead to growth disorder, fertility problems, and harmonal imbalances.

c) Difference of RAM & ROM:-
RAM:-
Stand for Random access memory. RAM is used for temporary, fast data storage during operation.

ROM:- Stand for Read only memory. It store critical instructions needed for the system to start & function, slower than RAM.

Q2 a)

Nibble:-

Nibble is a unit of digital information that consist of 4 bits, or half of a byte. It is used to represent a singal hexadecimal digit.

USB:-

Stand for Universal Serial Bus. USB is a standard for connecting devices to a computer. It enable data transfer and powersupply between the computer and peripherals like mouse, keyboard, mic, printer and storage devices. It support various versions (USB 2.0, 3.0, 3.1) with increasing data transfer speed.

Motherboards:-

The main circuit board of a computer. It connects and allow communication between the CPU, Memory (RAM), storage devices, power supply, and peripheral components. It provide the necessary electrical connections and expension slots for hardware components to function together.

d) CoP29 :-

The target is also outline in the paris agreement in 2015 and it remain a centeral focus in subsequent cop meetings. In CoP-29 It is one of the key targets to limit global temprature rise to 1.5°C above pre-Industrial levels. The 1.5°C target is considered a critical thrashhold because it would significantly reduce the risks associated with climate change compare to higher level of warming. To acheiving this target, countries are expected to take substantial actions to reduce greenhouse gas emissions, transition to renewable energy sources and implement sustainable practice across various sectors.

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Part-II

Q7:

a) Let 7 Consecutive number be

$x, x+1, x+2, x+3, x+4, x+5, x+6,$

Sum:

$$x+(x+1)+(x+2)+(x+3)+(x+4)+(x+5)+(x+6)$$

$$7x+(1+2+3+4+5+6)$$

$$=7x+21$$

Average of these number is 20

$$\frac{7x+21}{7} = 20 \times 7$$

$$7x+21 = 140$$

Subtract 21:- $7x+21-21 = 140-21$

÷ by 7 $7x = 119$

$x = 17$

largest number is $x+6$

put the value of x

$17+6 = 23$ Ans

b)

1. A told B that C is his father Nephew.
   - C is the Son of A's father sibling. So C is A Uncle or Aunt Child.
2. D is A cuson but not the brother of C
   - D is also a child of A father Sibling. but not C brother mean D is also A Cuson

Ans: D & C are the cusons of A and not sibling of eachother. Relationship of D and C are Cousins

C. Complete the sequence:

(i) 4 18 64 100 180 94 448

(ii) 1 2 10 37 101 226

(iii) 11 17 39 85 163

(iv) 13 24 46 90 178 354

(v) 64 144, 400, 900, 1764

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Q8

a)

One leg of the tringle is the distance from Ali eyes to the top of the tree is = 15 meters

The other leg is the distance from Ali feet to the tree = 10 meter

- The height from Ali feet to his eyes = 1.5 m
- Let the height of the tree is → H

So we use Pythagorean theorm

$$(15)^2 = (10)^2 + (H-1.5)^2$$

$$225 = 100 + (H-1.5)^2$$

$$225 - 100 = (H-1.5)^2$$

$$125 = (H-1.5)^2$$

Square Root:

$$\sqrt{125} = H - 1.5$$

$$\sqrt{125} = 11.18$$

$$H - 1.5 = 11.18$$

$$H = 11.18 + 1.5$$

$$H = 12.68 \text{ Ans}$$

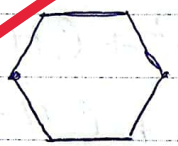
b)

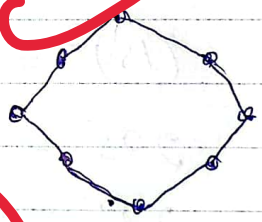
① Conscientious
② Persuasion
③ Discoursel
④ persuades
⑤ Complain

c)

- A regular hexagon with 6 line of symmetry.
- A regular octagon with 8 line of symmetry
- Circle has infinite line of symmetry

Hexagon





d)

Formula

$$V = \frac{1}{3} \times \text{Base Area} \times \text{Height}$$

$$\text{Base Area} = \text{Length} \times \text{Width}$$

Length = 7 cm
Width = 5 cm
Height = 10 cm

$$\text{Base Area} = 7\text{cm} \times 5\text{cm} = 35\text{cm}^2$$

Using Formula:-

$$V = \frac{1}{3} \times 35\text{cm}^2 \times 10\text{cm}$$

$$= \frac{1}{3} \times 350\text{ cm}^3$$

$$= 116.67\text{cm}^3 \text{ Ans}$$