Part II

Section-A

Question no. 04

a. Explain the role of heart and blood vessels in circulation.

• **Circulation:**

Circulation is defined as the ... nutrients from ... heart ... and vice versa.

Role of heart in circulation:-

Heart:-

Heart is a muscular organ ... inclined slightly toward ... the lungs ... the major organ responsible for ... of heart.

Structure of heart:

Heart ... into two chambers, left and right ... 4 chambers left ventricle, right ventricle, left atrium, right atrium. There are 2 valves in the heart responsible for providing the passage to blood flow.

The process:-

Blood from pulmonary ... left ventricle ... from pulmonary ... pointers to left ... Then, this deoxygenated blood ... in pulmonary artery. From there, blood ...

34

oxygenated blood

it then enters the right ventricle and right atrium vica a tricuspid valve. After that it goes to aorta from where it is distributed to the body.

Role of blood vessels

(a). Arteries → Arteries carry deoxygenated blood except pulmonary artery.
. Blood pressure is highest in case of arteries.

(b). Veins → All veins have oxygenated blood except pulmonary vein.
. Blood pressure is lowest in case of veins

(c). Capillaries → They are tiny, delicate vessels that connects arteries and veins to body.
. They carry both oxygenated and deoxygenated blood

Blood vessels are responsible for carrying the blood and nutrients to the body and that is how they are responsible for circulation.

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b. What is cyclone? Formation of cyclone

A cyclone is a natural disaster which is followed by strong swirling winds

A cyclone has following parts.

1. Eye:- This is the centre of the cyclone which has very low pressure.

Formation:

Cyclones are usually formed on the sea or other water bodies.

Cold winds of the ocean go on surface and replaces warm winds The procedure continues until a low pressure centre is formed These warm winds continue to circle the low pressure centre.

After sometimes, there is a huge wind formed and this is known as cyclone.

warm winds   eye .   surface
                                    ocean .
cold winds
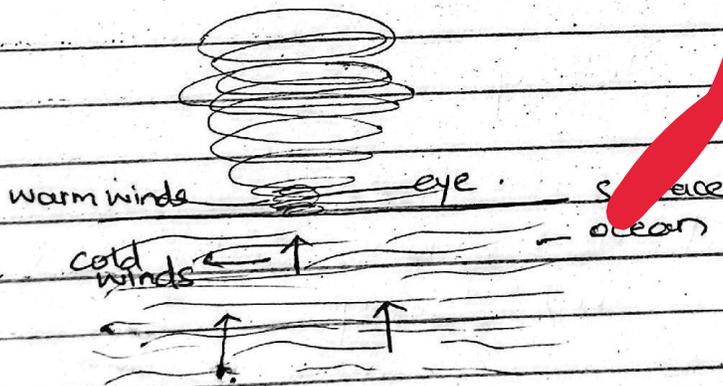
Effects of cyclone:-

Cyclone is drastic to the coastal areas.
As it touches the ground it breaks and causes flood.
The flood destroys lives, infrastructure, livestock.
Cyclone can also attract multiple people and infrastructure within it.

C. Functions of

1. Carbohydrates :
- Carbohydrates are a major contributer to the balanced diet
- They are the most important energy source of the body
- They are also responsible for the proper functioning of organs especially brain

2. Proteins:
- Proteins are responsible for the strengthening of muscles and tissue in the body
- They are also responsible for body growth
- Blood Clotting

3. Fats:
- They act as cushion and protect the organs from severy damage

4. Calcium:
- For the development and strengthening of bones
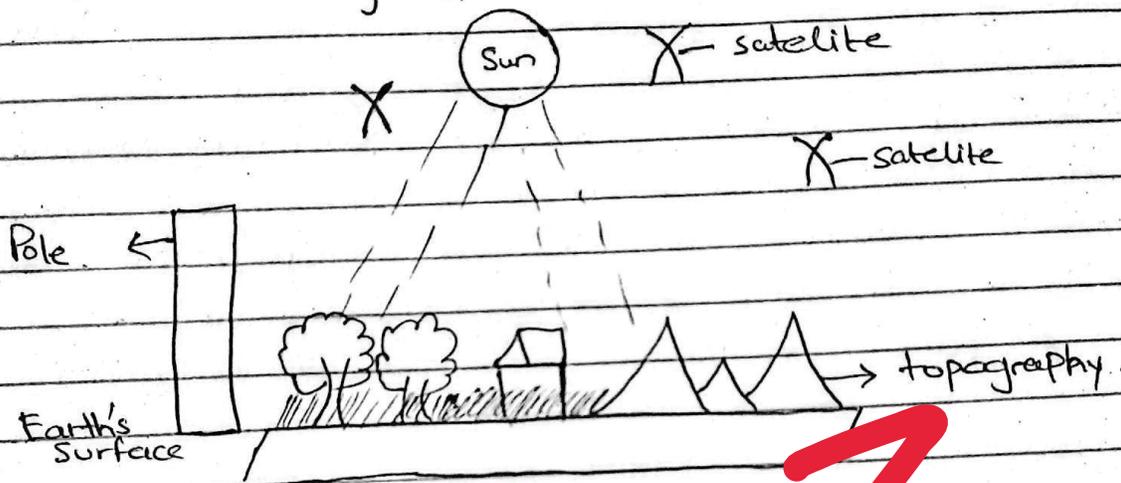- Also for the strong teeth

5. Iron:
It is used by Red blood cells to produce haemoglobin.

d. Remote sensing for environmental purpose.

Remote Sensing:

It is a process through which one can environmentalists can sence all environmental conditions digitally.

Sun's radiations strike the ground Satelites signal about what is present whereas on the Earth. These signals are recieved by the sencors and environmentelists can check that which part of Earth has what on it. Which part is forests on, ocean or mountains.

Benefits
- Helps in fast and accurate access.
- Easier to be monitored
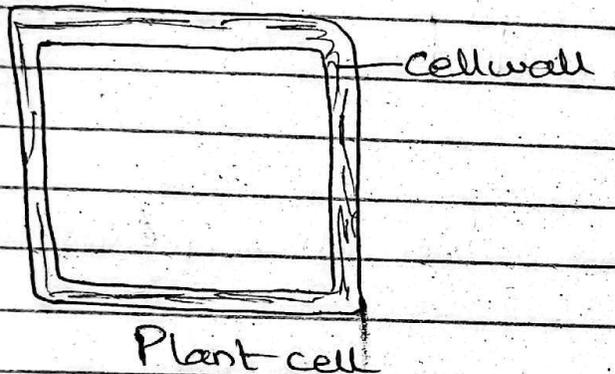- One can see which part of Earth is Productive.
- Cheaper

Question no. 02.

d. Structure and Functions of Cell wall, __.

ii. Cell wall:-

Cell wall is the outer boundary of the plant cells. It is a rigid, non living layer. Structure-

- It is present above the cell membrane only in plant cells
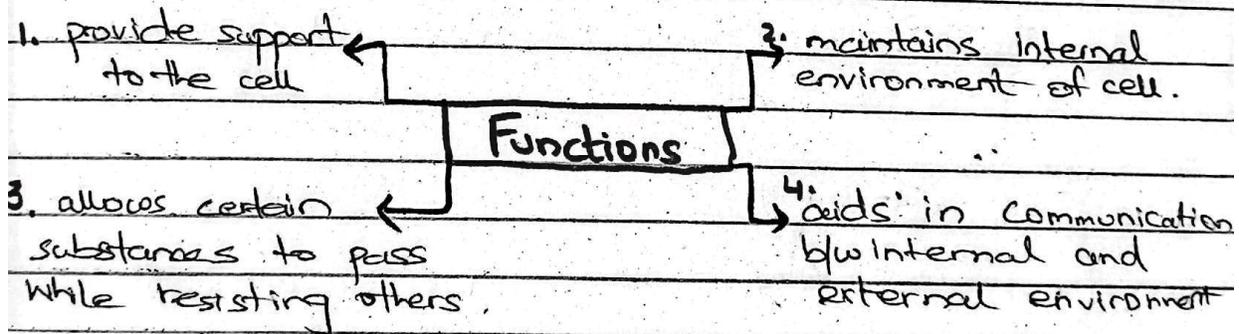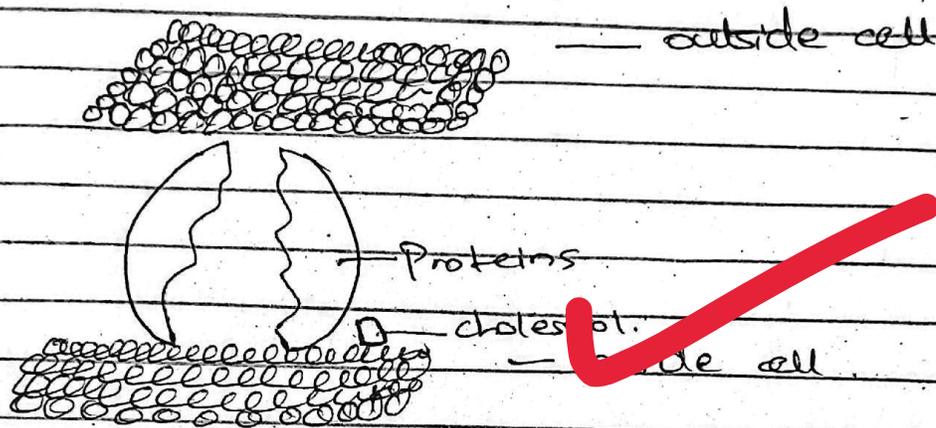- It is composed of cellulose in plan cells while in fungi, chitin

Plant cell

Functions →
→ It provides shape to the cell
→ Helps plant to stay ~~~ght
→ Protect pl~~~ from external factors
→ support plant structure

iii. Cell membrane.

Cell membrane is a flexible, thin, living boundary in both animal and plant cells

Structure:

- Present above beneath cell wall in plant cell and is the external layer of animal cells
- Contains phospholipids, proteins and carbohydrates
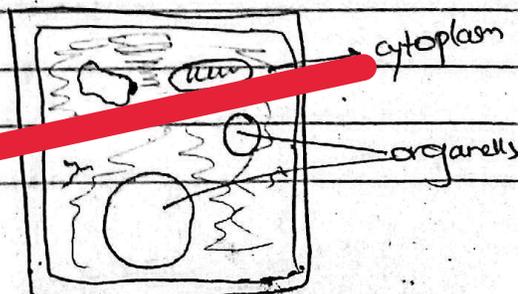- Well described by fluid mosaic model.
- Semi permiable

outside cell

Proteins
cholestol.
inside cell

1. provide support to the cell

3. maintains Internal environment of cell.

Functions

3. allows certain substances to pass while resisting others.

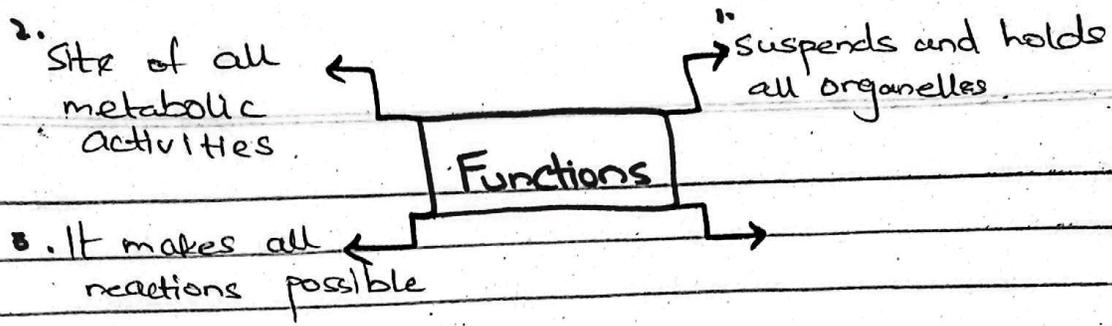4. aids in communication b/w internal and external environment

Cytoplasm

Cytoplasm is a jelly like fluid inside the cell.

Structure:

It is a fluid with the cell membrane. It has two faces.

1. cis face → fluid
2. face → organells

cytoplasm

organells

2. Site of all metabolic activities.

1. suspends and holds all organelles.

Functions
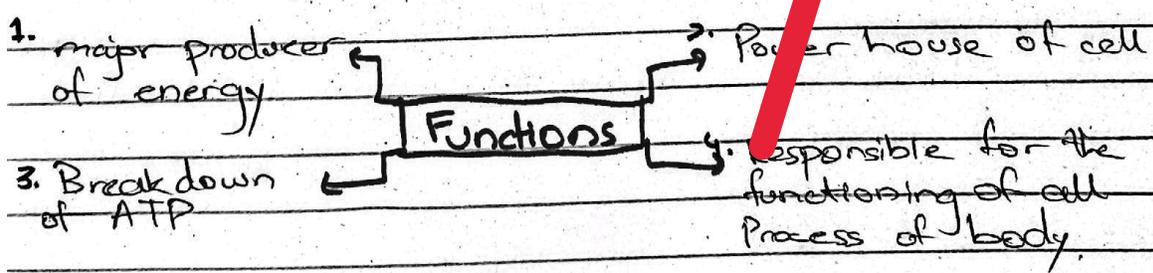
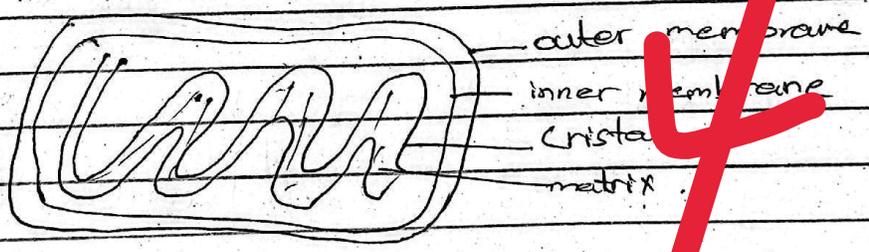**3.** It makes all reactions possible

4. Mitochondria

Mitochondria are double membrane bounded organelles that are the major source of energy

Structure

Double membrane bounded organelles
External membrane is simple while internal is folded into many folds called cristae, to increase space for chemical reaction. In the cristae, there is fluid called matrix.

- outer membrane
- inner membrane
- cristae
- matrix

1. major producer of energy

2. Power house of cell

Functions

3. Breakdown of ATP

4. responsible for the functioning of all Process of body.

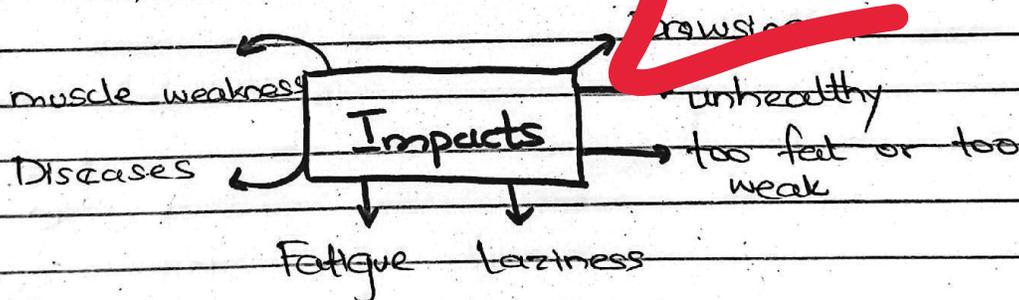## b. Unbalanced 'diet? How it help in healthy living.

Unbalanced diet :-

An unbalanced diet is a diet that has ~~needs~~ an unappropriate amount of nutrients in it.

Our body needs an appropriate and fixed amount of nutrients to stay healthy. However, when we fail to maintain a balanced diet, it has bad impacts on us.

- Unbalanced diet contain an excess or deficient amount of Carbohydrates ± 40%, Proteins ± 40%, Lipids ± 10%, fibre/nutrients ± 10%. Water below or more than 8 glass. Moreover, it also varies person to person, BMI, nature of work.

muscle weakness

Diseases

Impacts

drowsiness

unhealthy

too fat or too weak

Fatigue   Laziness

c. Urinary system :-

Urinary system or excretion system is responsible for the keeping the body clean.

Organs :-

1. Kidney → Kidney passes excess of water to ureters.
2. Ureters → Ureters take it to bladder
3. bladder → Bladder temporarily store it
4. Urethra → The water is released in form of urine.

## a. Structure of universe.

Big Bang Theory states that the universe was a small / single atom that exploded 13.8 billion years ago.

According to this theory, the universe originated from a point named as singularity.

And after that it continued to expand and is still expanding.

Universe is Expanding -

An experiment known as the Red shift explained that how the galaxies are moving apart from each other.

Solarsystem.   Asteroids   Galaxies   Planets   explosion
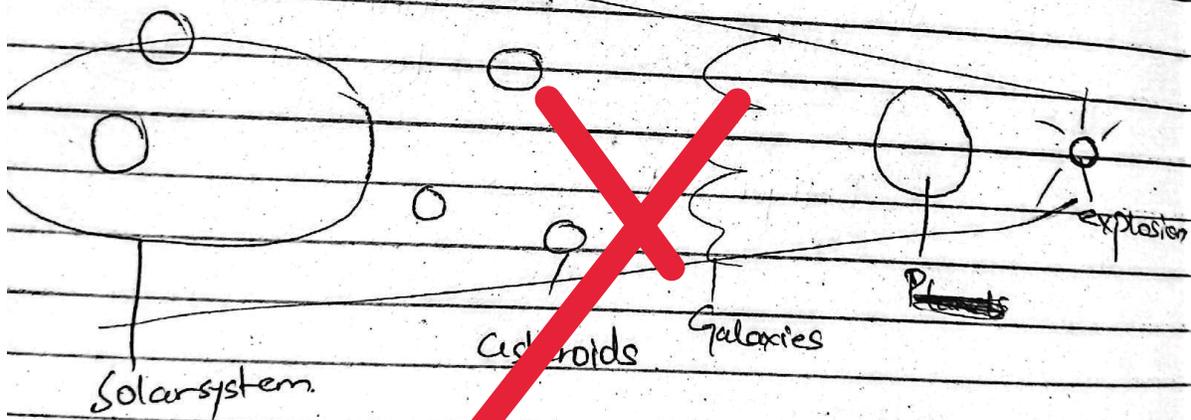
Question no. 08.

a. 5 different houses A to E ...

- A is to the right of B

  ~~AB~~   BA

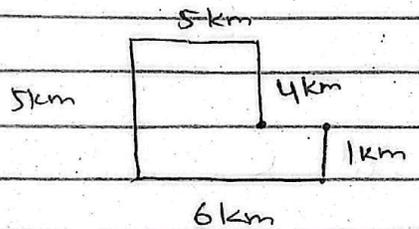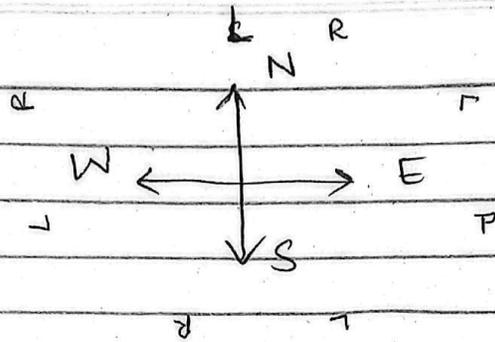- E is to the left of C. and right of A

  EC

- B is to right of D.

  DB

The total sequence is

  D~~B~~AEC.

The house in the middle is A.

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b. If u start running from a point ....

a. How many km are you from starting?
   • 1 km.

b. Which direction you will be running while finishing?
   • North

c. After 2nd turn, which direction?
   • South

d. From finishing point if you have to reach point where you started, which direction you run?
   • West.

C. Find odd man out.
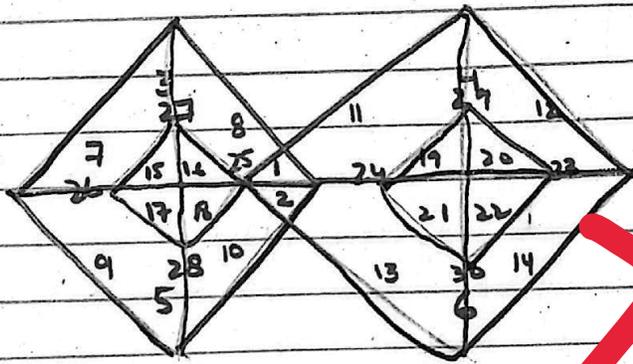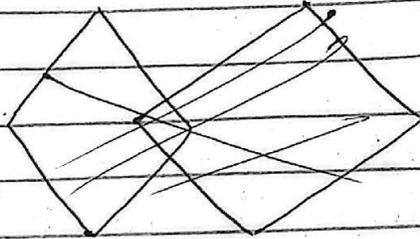a. THRSI → SHIRT
b. AOTC → COAT
c. EOUBSL → BLOUSE
d. KTRIS → SKIRT
e. RETAEWS → SWEATER

Blouse.

d. Triangles

30 Triangles.
30.

Question no. O6

a. Pointing to a women, Ahsan said,

Her granddaughter is the only daughter of my brother.
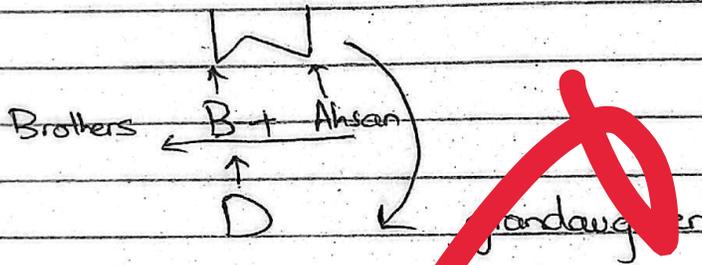
Grandd

The woman is the mother of Ahsan.

Evidense.
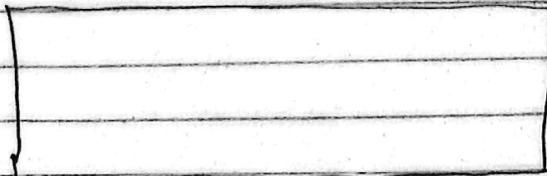
Suppose, the women is W.
Daughter is D.
Brother is B.

- Ahsan and B are brothers
- D is the daughter of B and granddaughter of W.

- B is the son of W.
- Since B + Ahsan are Brothers bothe are son of W.

Hence proved.

b. Ratio b/w L and b is 3:2. Man cycling at speed of 12 km/hr completes one round in 8 mins, area of park is?

3

length $= \dfrac{3}{5} \times 2$ Breadth $= \dfrac{4}{5} \times 2$

$\dfrac{6}{5}$ ✳ $\dfrac{4}{5}$

Area $= 2 (\text{l + b}) \; l \times$

$\dfrac{6}{5} \times \dfrac{4}{} = \dfrac{24}{25}$

c. In a two digit . . . . .

Ten's digit = 2.
Unit's digit = exceed Ten's digit by 2.
$\quad = 2 4$.

According to the condition, Product of
the given number and sum of it digit is
equal to 144, then no. is

$24 \times (2+4) = 144$
$24 \times 6 \quad = 144$

No. is **4**

                                       End.

d. LCM of 2 no.s is 48 . 3:3