Section- II

Q.No: 7.

b)

Given data:

Code Brother = QDGSNGA

To find: Code for Sister = ?

Solution:

B	R	O	T	H	E	R
Q	D	G	S	N	G	A

The relationship is as

B = A
R = Q
O = N
T = S
H = G
E = D
R = Q

Thus, word Sister would be

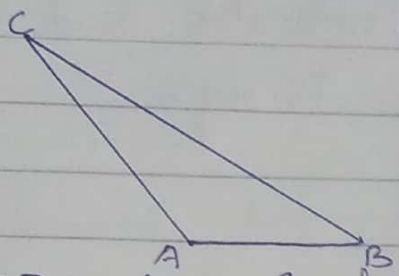
S = Q
I = D
S = S
T = R
E = H
R = R

∴ Sister = QDSRHR

c)

(i) Scalene Triangle.

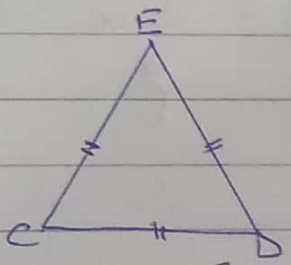
A triangle whose all three sides are unequal is called as Scalene triangle.



△ABC is Scalene Triangle.

(ii) Equilateral Triangle

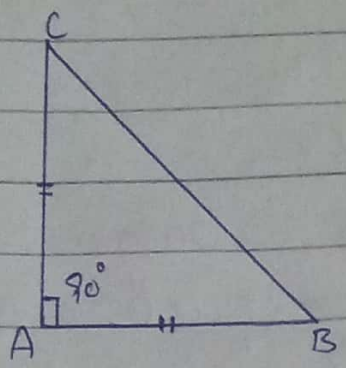
A triangle having all three sides equal is called an equilateral triangle.



△ CDE is Equilateral Triangle.

(iii) Isosceles Triangle and Right Angle Triangle

A triangle having two sides equal and a right angle is said to be both Isosceles and right angle triangle.



ΔABC is isosceles and Right angle Triangle

d)

Given data:

Total Slices of pizza = 8 slices

Slices with raisin = 3 slices

To find:

Probability of a slice with a raisin = ?

Solution -

$$\text{Probability} = \frac{\text{Favorable outcomes}}{\text{Total outcomes}}$$

$$P(E) = \frac{(nE)}{n(S)}$$

$$= \frac{3}{8} = 0.72$$

Thus, probability to get slice

with Revision is 0.72

Q.NO: 8

b)

Given = Cubes of 1st five prime numbers.

∴ Primes Numbers

2, 3, 5, 7, 11

their cubes will be

8, 27, 125, 343, 1331

To find

Airthmetic mean = ?

Solution.

Airthmetic Mean = $\frac{\Sigma x_i}{\Sigma x_i}$

$= \frac{8 + 27 + 125 + 343 + 1331}{5}$

$= 366.8$

Thus, airthmetic mean of cubes of 1st Prime numbers is 366.8

c)

Men	length	Days
50	20	40
70	20	x

$$\therefore \frac{50}{70} = \frac{x}{40}$$

$$x = \frac{50 \times 40}{70}$$

$$= 28.5$$

Thus, 70 men will take 28.5 days.

d)

Given Data

Property worth = 1750,000/-

Debt = 150,000/-

To find

Share of ~~brother~~ daughter = ?

Share of Son = ?

Solution =

First debt is to be Subtracted as

$$1750,000 - 150000$$

$$= 1600,000 \Rightarrow \text{Amount to be distributed}$$

Total Shares = 2 Son + 1 daughter

$$= 3$$

Dividing the amount into 3 portions:

$$\frac{1600000}{3}$$

$$= 533,333.3$$

As Son's Share is double. hence.

Son's Share = $2(533,333.3)$

$$= 1066666.6$$

And Share of daughter will be

$$= 533,333.3$$

Thus, Share of Son = Rs. 1066666.6

Share of daughter = Rs 533,333.3

SECTION - I

Q.5

a)

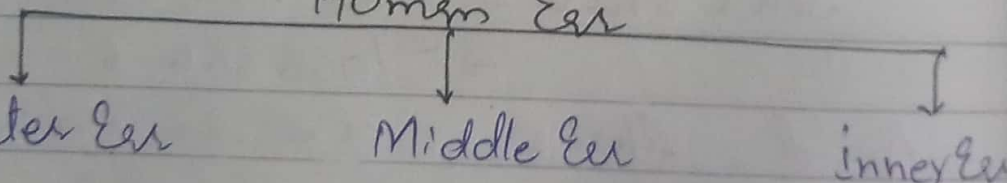
Human Ear

Human ear is an important organ of man. It is one of the sensory organs.

Structure:

The structure of a human ear is divided into three main parts -

i) Outer ear
ii) Middle ear
iii) Inner ear.



2) Outer Ear.

It consists of Pinna, Auditory Canal and Ear drum.

- Pinna :- It is outer muscular part which is visible to eye.
- It collects sound waves from environment.

- Auditory Canal = It is a passage through sound waves travel.
- Ear Drum = It is a disc-shaped structure which vibrates with coming into contact of sound waves.

Outer Ear

Pinna Auditory Canal Ear drum

⇒ Middle Ear

It consist of three tiny bones called ossicles. Their names are -

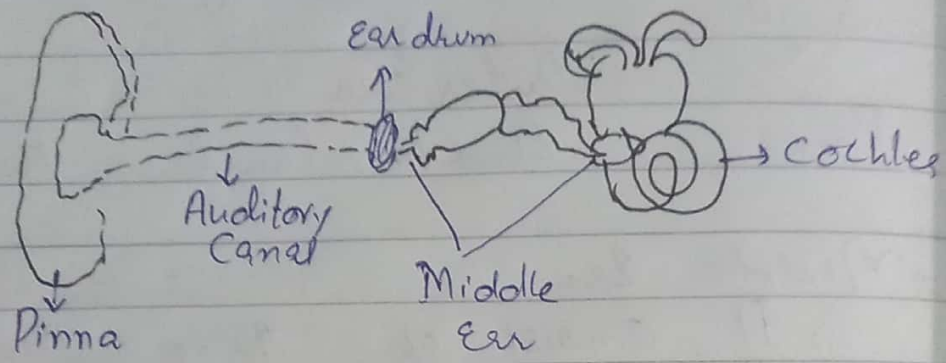
- Malleus
- Incus
- Stapes

- These bones transfer vibrations to inner ear.
- These also increase pressure of sound waves.

⇒ Inner Ear

- It consists of a bony structure which is composed of three semi-circular bones.
- It also contain a snail like structure called Chochlea.

- Chochlea contains tiny hair and fluid.
- Cochlea converts sound waves into electrical signals and send to brain.



Structure of Human Ear.

Functions of Human Ear:

As a Sensory Organ: Human ear is one of sensory organs. It helps in hearing process.

Body equilibrium: It helps to maintain body position and posture.

b. Digestion System and Role of Small Intestine

Digestion System:

A System which is responsible for digestion or break down of food into small absorbable particles is called digestion Systen.

The System involves following body organs:

1- Mouth: it is responsible for chewing and lubricating the food.
2- Oesophagus: it is a passage which carries food from mouth to the stomach.
3. Stomach: A sac-like structure which is responsible for digesting proteins.
4. Liver: it produce bile for digestion of fats.
5. Small Intestine: it is responsible for digestion of proteins, fats and carbohydretes.

6- Large intestine: it helps in absorption of nutrients and excretion of waste material.

Role of Small Intestine in Digestion.

Small intestine is a tube like structure extending from stomach to large intestine.

It recieves enzymes in bile from liver. These enzymes are responsible for digestion of food as following.

Enzyme	Targeted food
Chemotrypsin	Proteins
Lipase	Fats
Maltase	Carbohydrates
Trypsin	Proteins
Sucrase	Carbohydrates

Thus, small intestine has an important role in digestion of food.

Q.No: 5 (c)

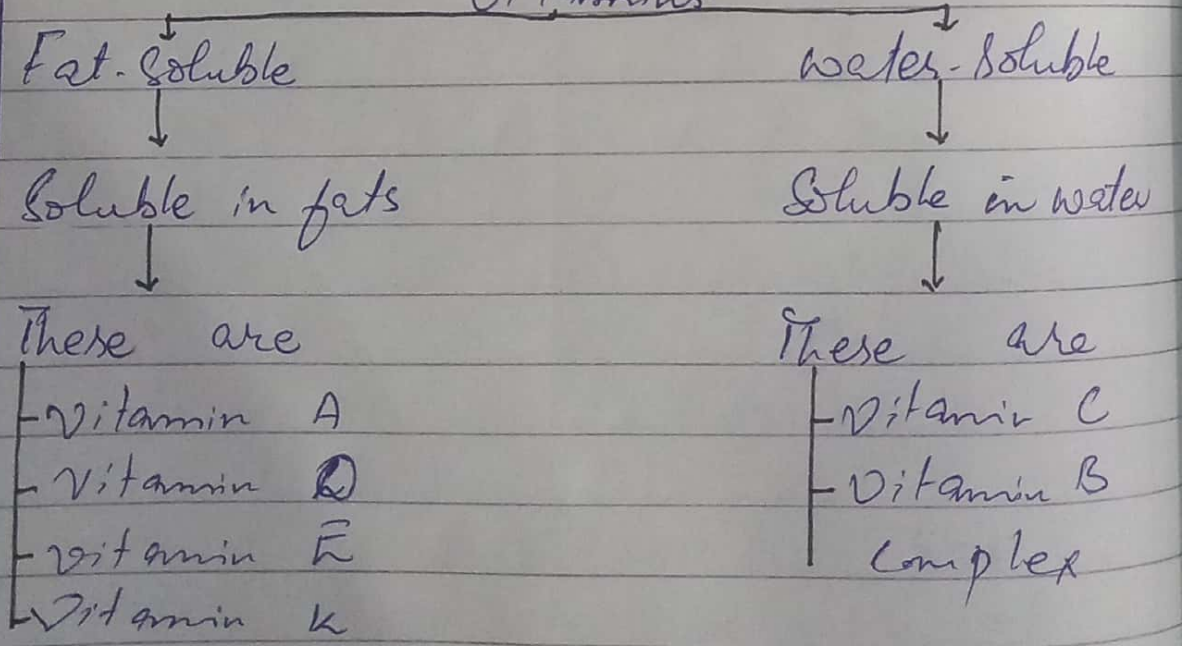
Vitamins.

Vitamins are organic Compounds which are required in minute quantities and are essential for normal growth and body functioning.

Types of Vitamins.

There are two types of vitamins.

1. Fat. Soluble Vitamins.
2. Water-Soluble Vitamins.



Sources: The sources of vitamins are:

Vitamin	Source
Vitamin A	Green leafy vegetables and red carrot
vitamin D	Cod liver oil and Sunlight
vitamin E	vegetables and Cod liver oil
Vitamin K	Green leafy vegetables
Vitamin C	Citrous fruits
vitamin B complex	Egg, meat, milk

Deficiency of Vitamins.

The deficiency of vitamins causes following disorders.

Vitamin	Disease / Disorder
Vitamin A	Night Blindness
Vitamin D	Rickets
Vitamin E	Haemophilia
Vitamin C	Scurvy
Vitamin B complex	Anaemia.

Q.5 . d.

Pituitary gland

It is a small granular gland present at bottom of human brain.

Functions:

- It is a endocrine gland and secretes hormones.
- It controls other endocrine glands.
- It also controls growth and metabolism in body.

Harmones Secreted by Pituitary gland.

Pituitary gland secretes following helmones.

- luteinising Helmone
- Thyroid Stimulating Helmone
- Sumetotropin Helmone
- Adrenocortico-tropic Helmone
- Growth Helmone.

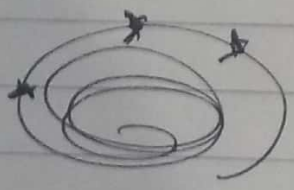
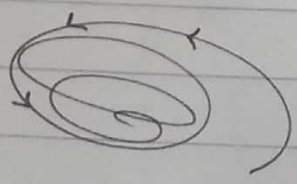
Q.No: 3.

a) # Cyclone

A large air mass which rotates around a strong centre of low atmospheric pressure is called as a cyclone.

Direction of Cyclone:

Each part or hemisphere of an earth pertain different direction of cyclone. it can be illustrated as follows:

Southern Hemisphere	Northern Hemisphere
	
Clockwise	Counter Clockwise

Causes of Cyclone:

Cyclone is mainly caused by warm and moist air over the

ocean's surface. The whole process can be described as:

warm air over
the ocean's surface
↓
air rises upward
↓
leave less air behind
↓
results in low atmospheric
pressure around the ocean
↓
air flow into low-pressure
↓
Cyclone is formed.

Strongest and destructive part of cyclone

The strongest and destructive part of a cyclone is Eyewall.

Eye wall: It is eye-shaped central part of cyclone. It causes heavy rainfall and strongest winds.

b.

Earthquake.

It is sudden shaking of Earth's surface.

Causes of Earthquake.

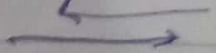
Earthquake is caused by following factors.

1. Tectonic Plates Movement:
Earth is composed of seven tectonic plates. These plates are not stationary; their movements are:

1- Divergence: Tectonic plates move far from each other

2. Convergence: Plates move closer to each other.

3. Lateral: Tectonic plates overlapes each other.



Any abnormality in these movements cause earthquake.

2. Volcano.

Earthquake is also caused by volcanos.

3. Human Activity.

Any human activity can increase friction and vibrations on Earth's crust thus leading to Earthquake.

Shallow Focus.

The focus of an Earthquak within Earth's out layer is called Shallow focus.

It is about 70 km deep.

Deep focus.

The focus in which earthquake is deep into the Earth's surface is known as Deep focus.

It is below 70 km deep.

Magnitude of Earthquake in Morocco.

The magnitude of recently earthquake in Morocco is 6.8.

c) Dengue Fever.

Dengue fever is a viral infection in human being.

Causative Agent: Dengue Virus

Vector: it is spread by mosquito Aedes Agypti.

Symptoms. These ranges from mild to high-grade fever, skin rashes, vomiting and headache.

Preventive Measures: it can be prevented by using

(i) Mosquito Repellents: To repel mosquitoes from human being

ii) Reducing mosquito Habitat
iii) Wearing protective clothes.
iv) Using mosquito nets.
v) Proper ventilation of homes.

d.

Ionic And Covalent Bonds.

Definition:

Ionic Bond: A bond which is formed by transfer of valence electrons is called Ionic Bond.

Covalent Bond: A bond which is formed by sharing valence electrons is called Covalent bond.

Solubility:

Ionic Bond: Compounds having this bond are soluble in poler solvents like water.

Covalent Bond: Molecules having Covalent bond are soluble in non-poler solvents like Alcohol.

Electricity Conductivity.

Ionic Bond: Compounds with ionic bonds conduct electricity in their molten form.
For instance: NaCl in water conduct electricity.

Covalent Bond: Molecules formed with covalent bond do not conduct electricity.

Melting Point.

Ionic Bond: it causes high melting point in its compounds

Covalent Bond: There is low melting point of molecules having covalent compounds.

Examples.

Ionic Compound= $MgSO_4$, NaCl, KCl.

Covalent Compound= water (H_2O), O_2, N_2, Cl_2