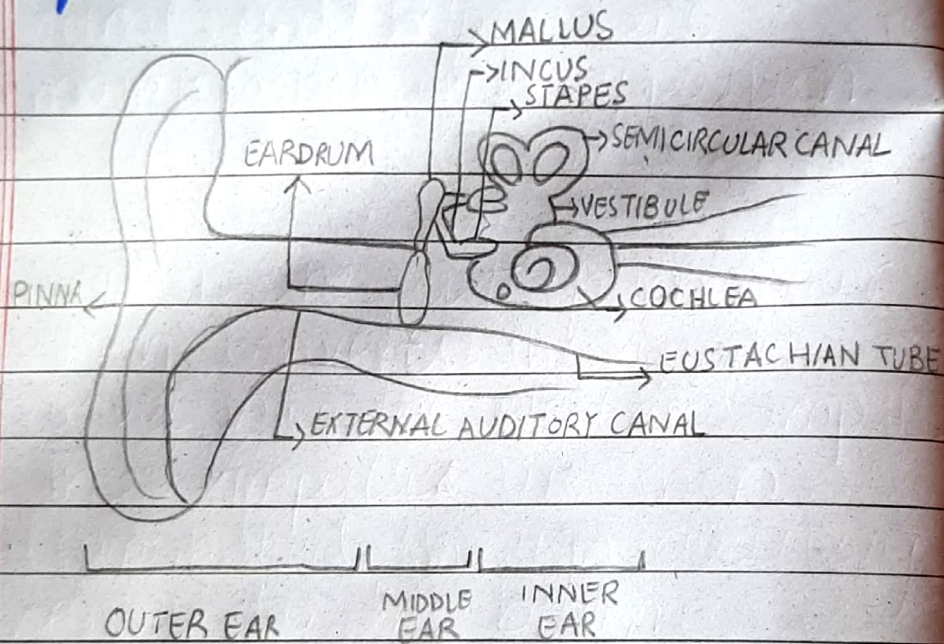


General Knowledge - I
General Science 4, Ability
Part-II
Section-I

Q.No.3

a. Draw and explain the structure of ear. Also label its parts.



HUMAN EAR

— HUMAN EAR:—

Human ear is the organ of hearing and equilibrium. It has three major parts.

i. OUTER EAR / EXTERNAL EAR:—

Outer ear consists of three parts.

DATE: _____ DATE: _____

a. **Pinna:**

It is the external part of the ear. It is where sound waves interact with the ear.

b. **External auditory canal:**

It is a canal located right after pinna. It is the passage for sound waves.

c. **Ear Drum/Tympanic membrane:**

After the auditory canal lies the ear drum or tympanic membrane upon which sound waves hit. The eardrum vibrates from the incoming sound waves.

ii. **MIDDLE EAR:-**

Middle ear consists of three tiny bones or ossicles, which increases or amplify the sound vibration. These bones are;

a. Malleus

b. Incus

c. Stapes

iii. **INNER EAR:-**

The inner ear consists of following main parts.

a. Semicircular Canal:

Semicircular canals contain fluid that keeps the balance of our body.

b. Vestibule:

This part of inner ear is situated after semicircular canal and helps in the maintenance of body position.

c. Cochlea:

It is the part of inner ear which converts the sound waves into the electrical impulses. These impulses are then transmitted through auditory nerves to the brain.

-- Eustachian Tube:

It is also the part of ear that equalize air pressure between the atmosphere and the middle ear.

DATE: _____

b. What is meant by essential fats? Write down different types of fat.

FATS:-

Fats are also called 'fatty acids' or 'lipid'. These are essential nutrients. They are good sources of energy and are essential for the transport of fat soluble vitamins.

All the vital organs of the body are covered with fat. Warmth of the body is also maintained intact because of fats. Good sources of fats are milk, meat, fish, oils, almonds etc.

Deficiency:

The deficiency of fats can cause the decrease of insulation of vital organs and a weaker immune system.

Excess:

The excess of fats in the body can cause rise in the level of cholesterol.

- TYPES OF FATS:-

There are four main types of fats.

i- MONOSATURATED FATS:

These are healthy fats and help to maintain healthy cholesterol levels.

ii- POLYSATURATED FATS:

These are also healthy fats. They supply omega-3 and omega-6! Body can't make these nutrients on its own.

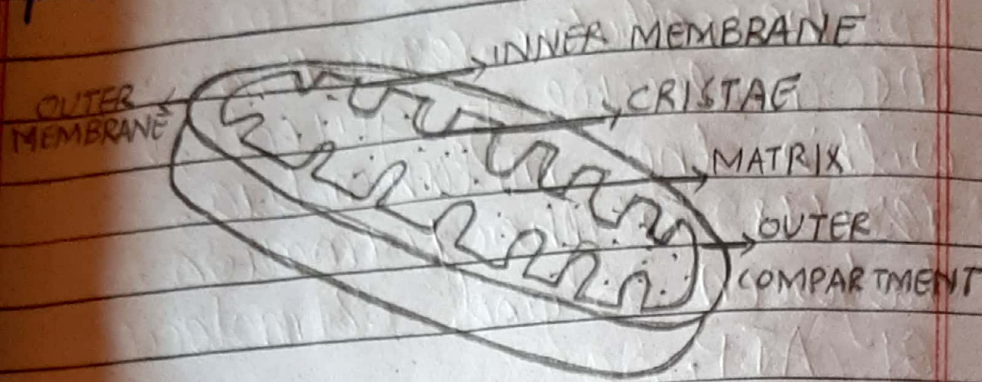
iii- SATURATED FATS:

These are unhealthy fats and can raise bad cholesterol of our body.

iv TRANS FATS:-

Trans fats are unhealthy fats and are worst for our body. Excess of trans fats in our diet can cause heart diseases.

DAY: _____
Q. Why mitochondria is called the power house of the cell?



MITOCHONDRIA

• MITOCHONDRIA:-

Mitochondria are membrane-bound cell organelles that generate most of the cell's biochemical reactions. Chemical energy is produced by the mitochondria is stored in a small molecule called adenosine triphosphate (ATP).

• Powerhouse of the cell:

Mitochondria are involved in releasing energy from food. This process is known as cellular respiration. It is for this reason that these are called powerhouses of the cell.

Cells that need a lot of

energy, like muscle cells, can contain thousands of mitochondria.

The cellular respiration of one molecule of glucose, within the mitochondria, results in the formation between 36 and 38 molecules of ATP.

d. Food Deterioration..... in Pakistan?

• FOOD DETERIORATION

Food deterioration is the process that renders a product unacceptable or undesirable for consumption and is the result of the biochemical activity of microbial populations that predominate the product.

Food is considered spoiled when an undesirable change in the color, flavour, odor or texture has occurred.

• FOOD ADULTERATION:-

It is the act of intentionally debasing the quality of food

by either adding or replacing the food substances with undeclared alternative components, or by the removal of some valuable components.

Food adulteration is the main cause of food deterioration because the process of adding adulterants the quality of the food is reduced.

• Measures in Pakistan:-

Anti-adulteration has started in various parts of the country to curb this menace.

Existing mechanism:-

- Pure Food Ordinance 1960
- Notified officers under DCO

Strategy:-

- Preparation and support by Food departments and PFA of districts
- Basic training of master trainers from each district.
- Information sharing with districts
- Guidance for hiring of food testing labs.

DATE _____

DAY _____

Penalties:

- For a 1st offence, rigorous imprisonment for a term of upto 1 year and fine PKR 100-2000
- For a 2nd offence, 3 months to 2 years of jail with PKR 500-10,000 fine.
- For repeated offences 3 yrs or more in jail and fine of 5000-100,000 PKR fine.