

## Question 3(a)

Q- Explain in detail the most common cause of heart attack.

### Heart Attack :

“Heart attack is the medical emergency that occurs when the blood supply to part of heart has been cut off due to blockage in one or more coronary arteries.”

In medical, this condition is also known as myocardial infarction.

### Cause of Heart Attack :

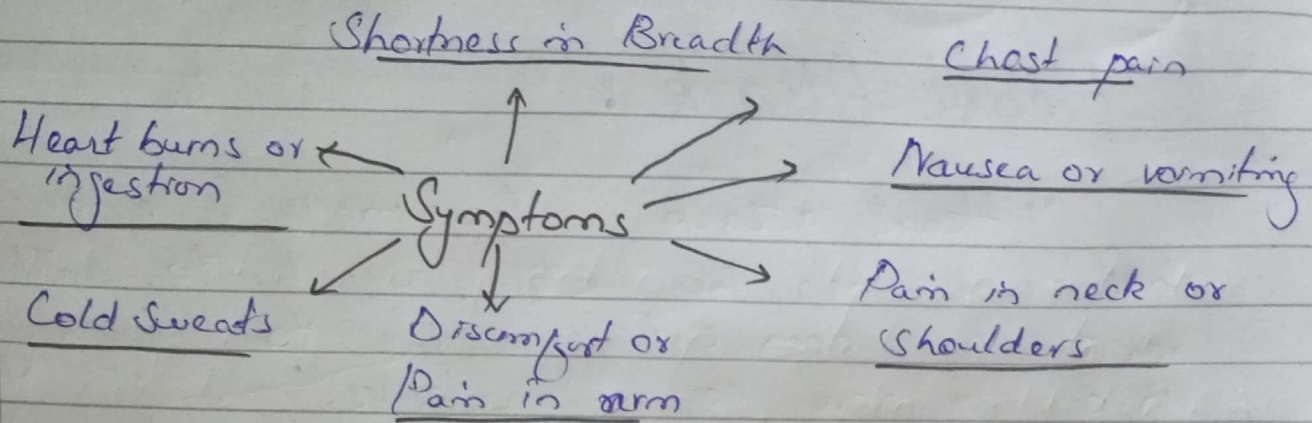
Of many causes, one of the most common is “coronary artery disease” that happens when coronary arteries become narrow or hardened due to atherosclerosis. Atherosclerosis refers to building of plaques which are fatty inside the walls of coronary artery. With passage of time, the artery continue to become more narrow and a time came where it is not able to provide blood to part of heart. When this happens, the part of heart muscles began to die if not getting blood. This leads to heart attack. Another cause of heart attack is sudden spasm or contraction of coronary artery, that blocks the blood supply.

### Risk Factors for Heart Attack :

Men over 44 years of age and females over 55 years of age are more prone to heart

attacks.

## Symptoms of Heart Attack:



## Diagnosis of Heart Attack:

Tests to diagnose <sup>heart</sup> attack include:

1. ECG (Electrocardiogram)
2. Blood tests
3. Chest X-rays
4. MRI (Magnetic Resonance Imaging)
5. Angiogram

## Treatment:

Treatment depends on the severity of heart attack. Medicines and surgical methods are used to unblock the coronary artery for proper flow of blood.

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(b)

Differentiate between drug addiction and drug abuse.

## Drug Abuse:

"Drug abuse refers to misuse or excessive use of substance whether it is legal or illegal, which leads to negative consequences for the individual or society."

### Examples of Drug Abuse:

#### a- Alcohol Abuse:

Consuming alcohol in a way that can lead to problems like health issues, accidents or legal troubles.

#### b- Prescription Drug Abuse:

Taking prescription medications (like painkillers) in higher doses without a prescription.

## Drug Addiction:

"Drug Addiction or substance dependence is a complex condition characterized by compulsive and uncontrollable urge to use (legal) drug despite negative consequences."

### Examples of Drug Addiction:

#### a- Heroin Addiction:

A person addicted to heroin will prefer to obtain and use drug over other aspects of life like work, family etc.

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## b. Nicotine Addiction:

People addicted to nicotine find it extremely challenging to quit smoking, despite knowing its injurious effects.

## Key Differences:

### 1- Control of Self:

A drug abuser may not necessarily be addicted. He may have some level of control over their desires to use drug whereas, an addictor find it hard to control himself.

### 2- Physical Dependence:

Drug abuse doesnot always leads to physical dependence, whereas those who are addicted often find it difficult to continue their normal life without drugs.

### 3- Psychological Dependence:

Drug is central to addictor's personal thoughts, emotions and daily life; he is emotionally and psychologically dependent on drugs. On the other hand, this psychological dependence is not always present in mind of drug abuser.

### 4- Consequences:

Consequences of drug addiction are generally more severe than those of drug abuse and can affect person's life including physical health, mental well being, relationships and social functioning.

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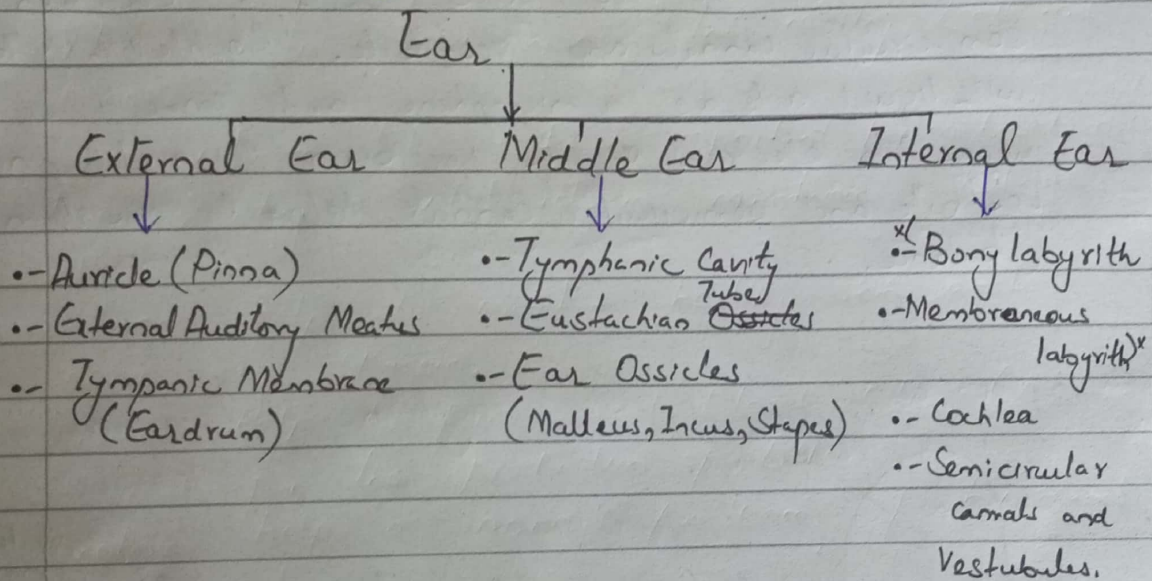
(c)

Q. Draw structure of human ear and briefly explain its functions.

## Human Ear:

The ear is sensitive organ of human body. It is mainly concerned with detecting, transmitting and transducing sound. Maintaining a sense of balance is another important function performed by human ear.

## Structure of Human Ear



## Outer Ear: (External Ear):

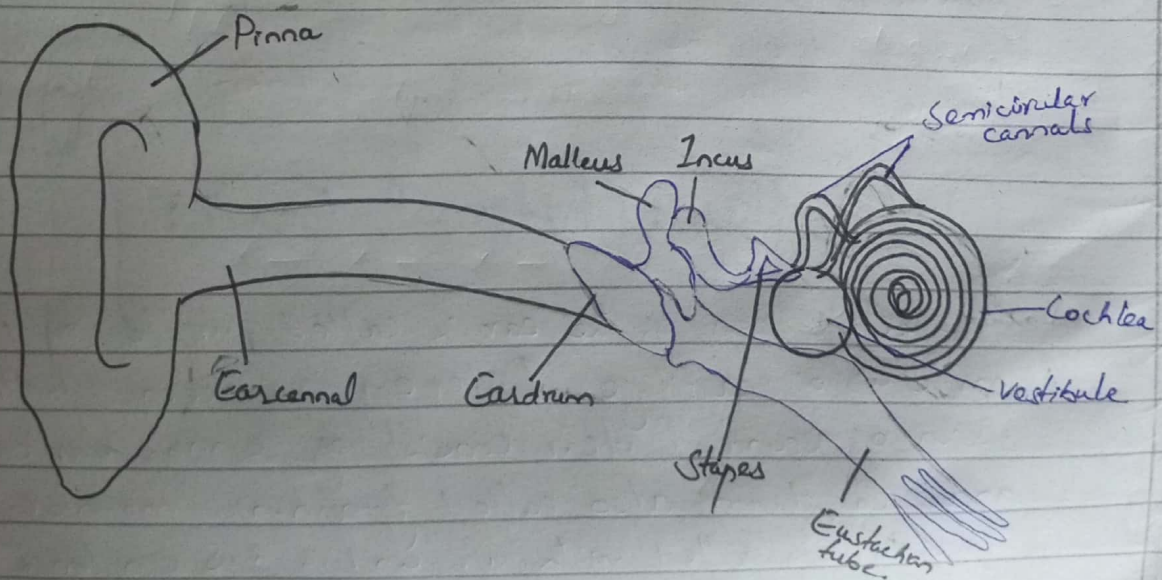
The visible part of the ear is called auricle or pinna, made up of cartilage. Outer ear is concerned with transmission of sound. Outer ear consists of pinna, ear canal and ear drum also called tympanic membrane. Ear canal is filled with air and is 2.5 cm long. Skin surrounding ear canal contains glands that secrete wax.

## Middle Ear :

Middle Ear connects outer ear with inner ear. Primary function of middle ear is to conduct sound waves through tympanic membrane to cochlea via ear bones. The middle also have ear ossicles which are malleus, incus and stapes. Sound waves cause them to vibrate. The eustachian tube present in middle ear controls the pressure.

## Inner Ear :

Inner ear has two main functions i.e. to convert sound signals into electrical signals for brain and to create a balance by detecting position and motion. Inner ear has three parts : cochlea, semi-circular canals and vestibule. Cochlea is filled with liquid acts as a microphone and convert sound waves into electrical signals for brain via auditory nerve. Vestibule and semi-circular canals helps to maintain balance.



Structure of Ear.

(d)

Q What is significance of Vitamins. Describe the sources, uses and deficiency of fat soluble vitamins.

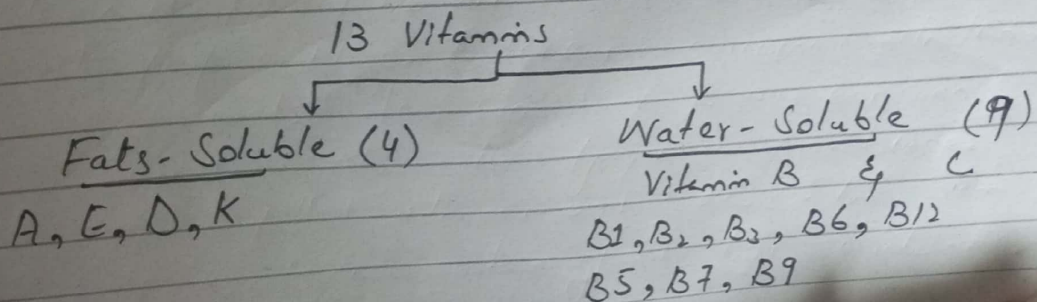
## Vitamins:

Vitamins are the group of substances that are needed for normal cell functions, body growth and development. There are 13 essential vitamins required for the body to work properly.

## Significance of Vitamins:

1. Vitamin deficiency can cause health problems.
2. Vitamins help in maintaining the healthy teeth and bones.
3. Some vitamins like B12 is important for metabolism.
4. Vitamins play a vital role in maintaining balance diet.
5. Vitamins help to maintain healthy skin and nerves e.g. Niacin.
6. Vitamins help to form Red Blood cells (RBCs) required for the production of DNA.
7. Choline helps in normal functioning of brain and nervous system.

## Types of Vitamins



# Fats - Soluble Vitamins

They are stored in body's liver, fatty acids and muscles. It includes vitamins A, D, E and K. They are absorbed easily by the body in the presence of dietary fat.

Vitamin	Source	Use	Deficiency
Vitamin A (Retinol)	Carrot and Green vegetables	Healthy vision, boost immune system	Night blindness
Vitamin D (Calciferol)	Fish, Egg Yolk and Cheese	Helpful for bone growth	Rickets, Osteoporosis
Vitamin E	Almond, Peanuts, Soyabean	Antioxidant, boost immune systems.	Neuropathy, Anemia
Vitamin K	Green leafy vegetables like Spinach.	Blood Coagulation	Hemorrhagic disease.

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