

### **Question 1**

- A) Explain the structure of Earth. (5)
- B) What is food adulteration? Explain its causes with respect to Pakistan. (5)
- C) What are the possible disadvantages of unbalanced diet? (5)
- D) What are plastics and ceramics? (5)

### **Question 2**

- A) What are the rocks? Give its types and the process of rock formation. (5)
- B) Discuss Volcanism. (5)
- C) Give five uses of the following: (5)
  - i. Iron
  - ii. Potassium
  - iii. Vitamin A
  - iv. Calcium
  - v. Vitamin B-Complex
- D) Explain Proteins and its types. (5)

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## General Science and ability

Q NO. 1

(a)

### Earth and its structure

Earth is third planet of solar system with numerous features. The distance from the sun is one light year. moreover, its rotation period 23 hours 56 minutes and 4 seconds. Earth takes one year (365.25 days) to complete one round around the sun. Further more, earth consists three parts:

#### 1. Crust:

Crust is the surface where the settlement of humans exists. It starts from 7-12 km. The crust of the earth contains sandy rocks, silicates so on and so forth.

#### 2. mantle:

Mantle is the layer soon below the earth crust. It has solid rocks and profound silicate capacity.



3.

### Core:

Core is the region below the mantle. It contains profound molten and rocky region. The temperature is high.

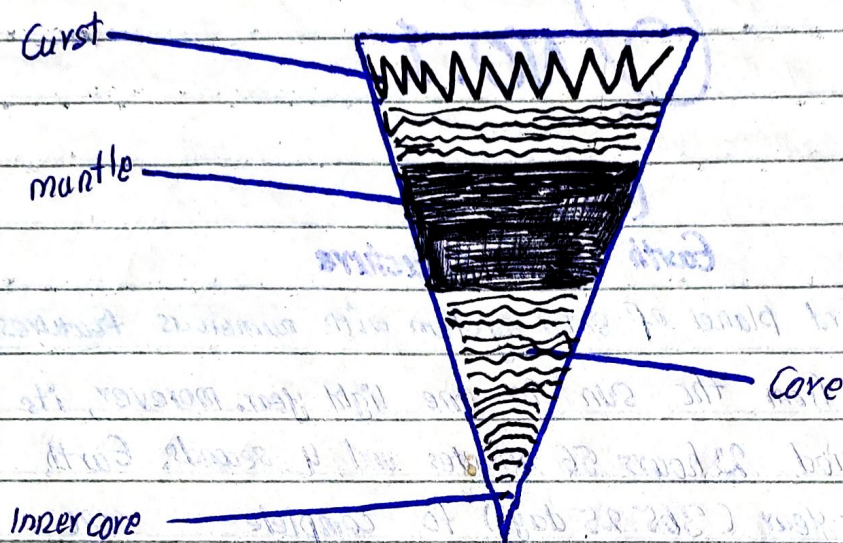


Figure 0.1 the structure of the earth

(b)

### Food adulteration

Food adulteration refers to intentional addition of substances that harm the quality food. Moreover, the addition of substances can increase the quantity of the food. Consequently, food adulteration affects the health of individuals with long term diseases such as stomach problem so on and so forth.



## Causes of food adulteration in Pakistan

According to Punjab Food Authority's report 2023, there are numerous causes exist for the food adulteration in Pakistan.

### 1. Economic gain:

Companies and services providers carry the food adulteration so as to gain profits. Companies do not provide high quality foods due to less profits. Thus, in order to achieve huge gain, the food provider hotels, companies, and services rely on food adulteration.

### 2. Market competition:

Market competition in Pakistan pushes the companies and sellers to carry food adulteration. The food adulteration not only brings profits to the adders but also wins the competition in the market.

### 3. Consumers demand:

Consumers always demands for cheap quality of foods. The demands of consumers push the companies to carry food adulteration.



(c)

## Disadvantages of unbalanced diet

Unbalanced diet refers to improper intakes of vitamins, proteins and minerals. According to WHO, unbalanced diet has numerous disadvantages.

### 1. Mental impacts:

According to healthcare experts, insufficient intakes of carbohydrates can impact the mental health. Consequently, lack of mental performance and stress<sup>will</sup> be experienced due to improper diet.

### 2. Chronic diseases:

Chronic diseases can be caused such as heart attack and FSHD (muscular weakness).

### 3. Bone Problems:

Poor intakes of vitamin E can lead to bone problem (rickets). The bones will get weak and soften with joint issues.

### 4. General health issues:

Insufficient intake of vitamin A leads to night blindness, poor intake of proteins can lead to a weak immunity system.



## (d) Plastics and Ceramics

### Plastics

Plastics are made of long chain of molecules. It has two types,

#### 1. Thermoplastics:

Plastics that can be moulded with high heating and harden with cooling. Moreover, thermoplastics can be reproduced.

#### 2. Thermosetting plastics:

Thermosetting plastics can only be harden one time without the capabilities of softness and reproduction.

### Examples of plastics

Plastic bags, toys, lites, gloves so on and so forth

### Ceramics

Ceramics refers to inorganic compounds that have been used numerous shapes. Ceramics have produced through clay. Inorganic compounds mixed with clay to produce ceramics.

### Examples

Bricks, electronic buttons, cups, glasses, etc.



# Q. NO. 2

(3)

## Volcanism

Volcanism refers to the process of magma coming / moving from the earth.

### Formation

Numerous steps are involved in the process of magma.

#### 1. Heating / melting:

Rocks under the surface of the earth melt due to high temperature. Later, the heats that melt rocks become magma.

#### 2. Magma Chamber:

Magma which has been produced by the combination of heat and rocks collect in the magma chamber.

#### 3. Eruption:

Finally, the heat and force of rocks erupts the magma in the shape of eruption. Magma finds its ways and come out.



(c)

#### iv. Calcium

It is one of the major types of minerals. Calciums are needful for bones and teeth.

#### Sources

milk, Youghart, are the best resources of calcium.

#### iii. Vitamin A

Vitamin A is one of the fundamental sources of diets. Its deficiency can lead to night blindness and dry skin.

#### Sources

Eggs, oranges, color fruits, carrots, meat so on and so forth.

#### i. Iron

Iron is one of the minor parts of minerals. It is important for the blood. The deficiency of iron can lead to blood issues.

#### Sources

Fiber, dry fruits, wet fruits etc



## ii. Potassium

Potassium is one of the major parts of minerals. It helps to make muscles strong and boost the heart's working and heartbeats. Its deficiency leads to weakness.

### Sources

pears, oranges, dry fruits, milk, eggs etc.

(d)

## Proteins and its types

Proteins makes the tissues of the body stronger and muscles strong. It repairs the tissues of the body.

### Sources

milk, eggs, dates, fruits, meats, potatoes etc

### Types of proteins

#### 1. Structural Proteins:

Structural proteins shape the structure of the skin, hair and nails.



## 2. Enzymic proteins:

It assists the break down of foods and fast the process of consuming.

## 3. Defence proteins:

Defensive proteins assist the body to defend against bacteria etc.

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