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19.5  
GSA - Test 1

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LMS: 37870

Q1:

A. Differentiate between the food adulteration and food contamination. Give controlling measures of food adulteration.

Ans.

### FOOD ADULTERATION:

Food adulteration is intentional addition of a substance in food to lower the quality of food or replace any ingredient with a cheap alternative. Adulteration is usually motivated by economic gains.

Food Adulteration is of four types, i.e.:

- ① Intentional Adulteration
- ② Incidental Adulteration
- ③ Metallic Adulteration
- ④ Packaging Hazards.

Examples:

- ① Addition of water in milk.
- ② Addition of sugar solution in honey.
- ③

### FOOD CONTAMINATION:

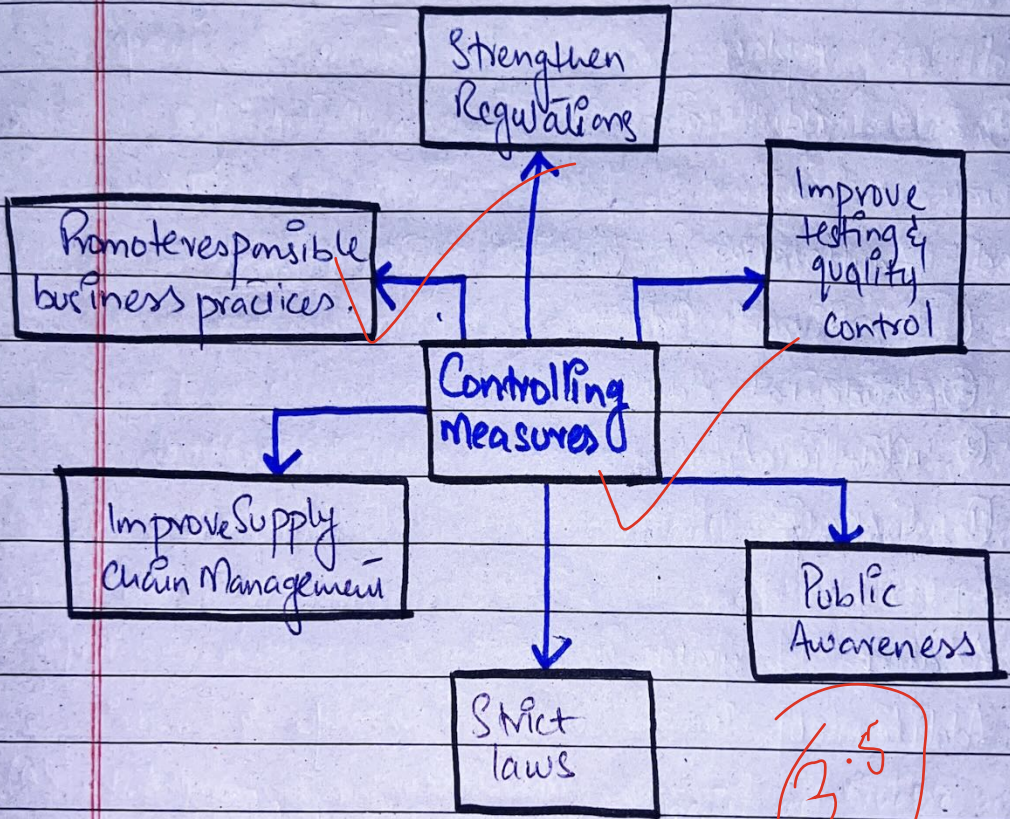
Food contamination is similar to incidental adulteration of food. It is the unintentional presence of ~~food~~ or substance in food, which is usually due to a failure in manufacturing or the quality control. Contamination can occur at any time or stage of food production, from harvesting to storage.



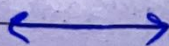
Examples:

- ① Bacteria getting in food if placed on a contaminated plate/shelf.
- ② Pesticide residues on fruits and vegetables due to improper spraying.

**FOOD ADULTERATION CONTROLLING MEASURES:**



Taking the measures and maintaining a check a balance by Food authorities can help control the food adulteration in the society. As food adulteration might help some in economic gain but it further causes major health issues leading to unhygienic and unhealthy society.





B. Describe five food preservation methods with examples.

Ans. FOOD PRESERVATION:

Food preservation is any of a number of methods by which food is secured from spoilage after harvest or slaughter.

Common Food Preservation Methods:

① Canning:

Sealing of food in air tight jars/containers to prevent the growth of bacteria, yeast & molds.  
Eg: Sweet Corns Canned in a container.

② Freezing:

Placing the food in low temperature between  $-18^{\circ}\text{C}$  to  $-35^{\circ}\text{C}$ , which protects the food from bacteria because no bacteria can survive at this temperature.

Example:

Meat freezing for using over months.

③ Pasteurization:

Heating of food to destroy the bacteria and enzymes.

Eg:

Preservation of milk after boiling.



④ Salting:

Salting draws moisture of food and microorganisms, to inhibit their growth.

Example:

Meat, fish and vegetables are preserved by this method.

⑤ Pickling:

Placing vegetables in vinegar solutions which lowers the pH of vegetables and prevents spoilage.

Example:

Pickling of cucumber, lemons etc.



C. Explain the following weather variables:  
a) Temperature b) Pressure c) Humidity.

Ans.

TEMPERATURE:

It is the amount of heat or kinetic energy in an air mass. As the altitude increases the temperature decreases, that is why the mountains are cooler.

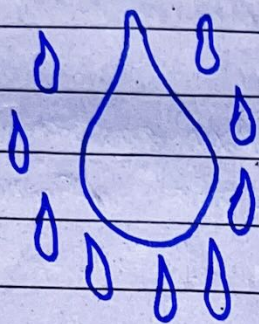
FIGURE:

- Thermometer used to measure temperature.



## HUMIDITY:

Humidity is the amount of water vapour in a mass of air. Higher the humidity, higher the air feels wetter.

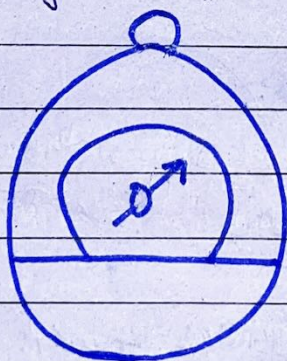


• FIGURE:

Water vapours in air.

## PRESSURE:

Pressure is the force exerted on an object by the air around it. Pressure is measured by barometer. The atmospheric pressure varies widely on earth, and these changes are important for the study of weather and climate.



• FIGURE:

Barometer, used for measuring pressure.

Q. Explain the phenomenon of Earthquake:

Ans. EARTHQUAKE:

An earthquake is a natural disaster which occurs when the Earth's crust suddenly moves along the fault lines. It is the temporary



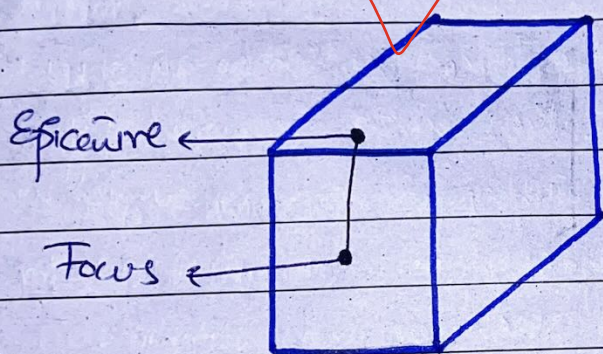
trembling and shaking of the ground due to the release of energy stored inside the earth.

Eg: 05 8, 2005 and 05 26, 2015

↳ Both the earthquakes were of less than a minute.

### LOCATION:

The location where an earthquake begins is called the epicentre - point vertically above the focus on the surface of the earth.



### EARTHQUAKE CAUSES:

The theory which explains the causes of the earthquake is called Plate Tectonics.

#### STANCE OF PLATE TECTONICS THEORY:

According to this theory there are seven major plates and the main driving force responsible for the movement of the plates is the "Gravity". When a plate in the oceanic lithosphere meets another plate, the denser plate drags rest of the plate,



7.

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this process is called Sub-Duction. So the currents of magma - mixture of molten and semi-molten rocks in the earth - also contribute causing the movement of tectonic plates, which result in the occurrence of earthquake.



Q2:

A. Write a short note on Vaccines.

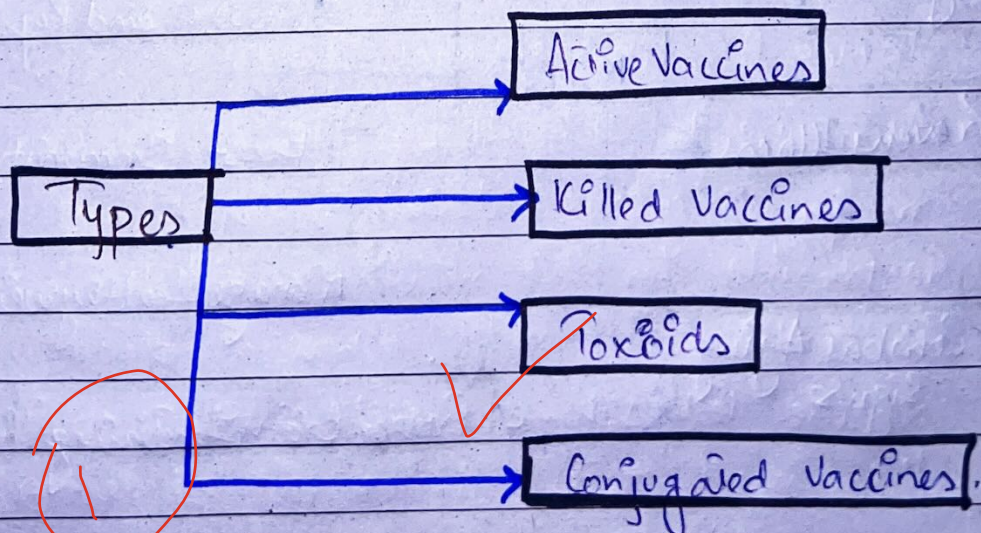
Ans: VACCINES:

Vaccines are a suspension of weak, killed or fragmented microorganisms, toxins or other biological preparation, such as those consisting of antibodies, lymphocytes or mRNA, which is administered primarily to prevent disease.

The first vaccine was introduced by a British physician "Edward Jenner" in 1796 for cowpox virus.

TYPES:

Some types of vaccines are:





B. What is balanced diet? Explain its merits.

Ans. BALANCED DIETS:

A diet which contains the right quantities of essential micro and macro nutrients in it is said to be a balanced diet.

Micro Nutrients:

↳ Nutrients in small quantities, which are:

① Minerals

② Vitamins.

Macro Nutrients:

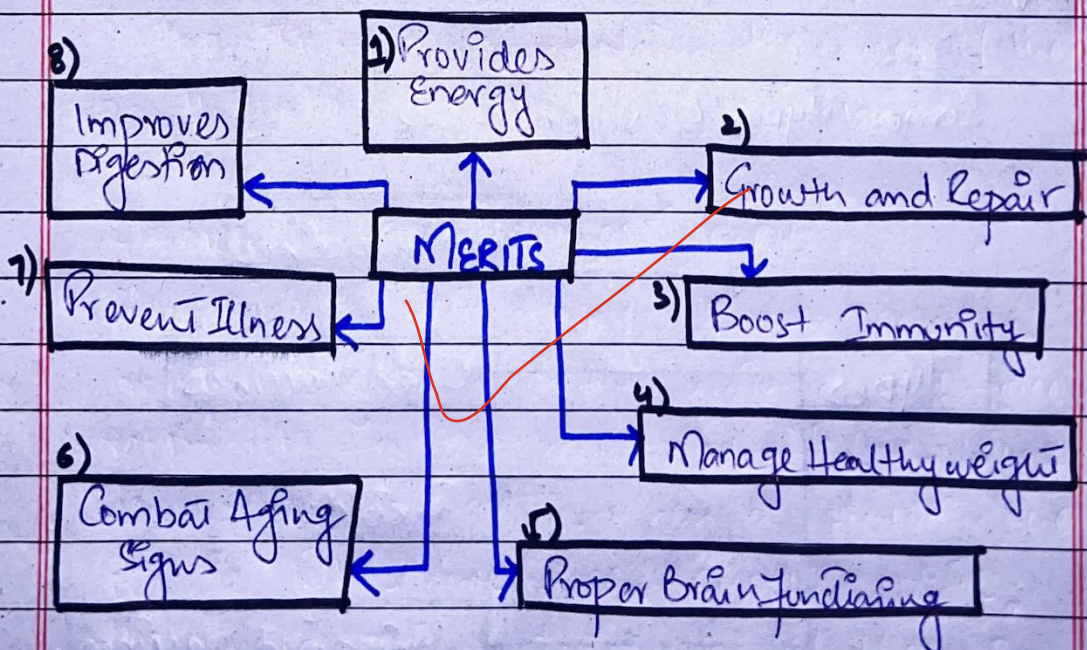
↳ Nutrients in large quantities, which are:

① Carbohydrates

② Proteins

③ Lipids.

MERITS OF A BALANCED DIET:





9.

DATE: \_\_\_/\_\_\_/\_\_\_

## BALANCED DIET COMPONENTS:

There are ~~seven~~ key components which must be included in a balanced diet. The components are:

COMPONENTS	QUANTITY
Carbohydrates →	45 To 55%
Vitamins →	<del>Trace</del> Trace
Proteins →	<del>10 To 35%</del> 10 To 35%
Fats →	20 To 35%
Fibre →	Included in Carbs



C. Highlight the weaknesses in DRM of Pakistan.

Ans.

## DISASTER RISK MANAGEMENT:

Disaster risk management involves a combination of strategies to reduce the risk of disasters and prepare to fight with them.

The disaster risk management includes some major steps i.e.

- ① Disaster Risk Reduction
- ② Disaster Risk Financing
- ③ Preparedness
- ④ Response

Pakistan has established an organization named as "National Disaster Management Authority" which is responsible for the management of



disasters. However, there are weaknesses due to which Pakistan faces huge losses due to disasters like floods, earthquakes, tropical cyclones etc.

### WEAKNESSES IN DRM OF PAKISTAN:

Some major weaknesses in DRM of Pakistan, due to which Pakistan faces huge losses during disasters are:

- 1) Lack of Preparedness.
- 2) Inadequate Infrastructure
- 3) Limited Resources.
- 4) Climate Change problem.
- 5) Fragmented Institutions.
- 6) Limited Public Awareness.



Q. Write a short note on Carbohydrates.

Ans.

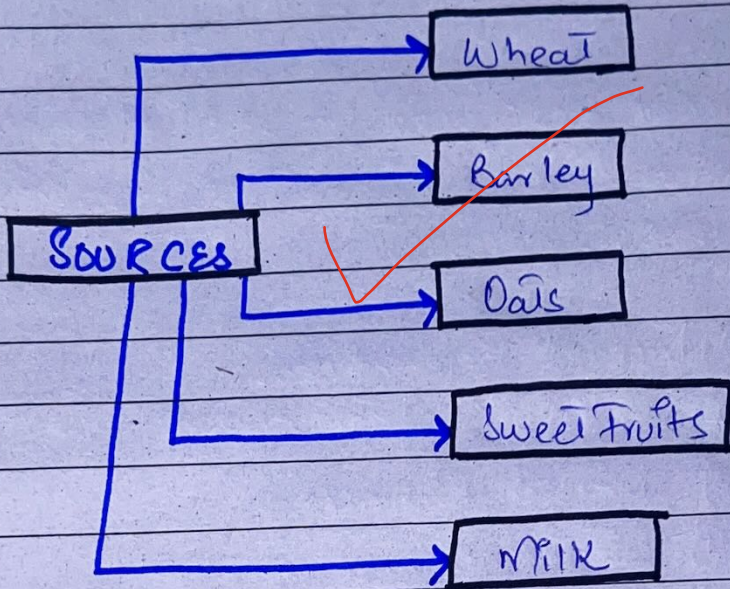
### CARBOHYDRATES:

Carbohydrates are the sugar molecules, which are also the main source of energy along with proteins and fats. They are the main source of energy for the proper working of the vital organs of our body. The body breaks down the carbs into smaller parts to utilize them as an energy source. A main component of the balanced diet



Includes adequate amount of carbohydrates.

## SOURCES OF CARBS:



However, everything in excess causes harm instead of benefits. The excessive intake of carbohydrates causes health problems such as;

- 1) Obesity
- 2) Diabetes
- 3) High Blood Pressure
- 4) Cardiovascular Diseases
- 5) Acne
- 6) Brain Fog.

