

Question #01

(A)

Definition of Vaccines and Antibiotics.
Difference between them.

Answer:

VACCINE

Vaccines are made from weakened or killed germs, or parts of germs that teach the body how to react after recognizing the pathogen and fight those specific diseases caused by those pathogen or other invaders.

Characteristics of Vaccines:

Vaccines help to prevent diseases. They go through rigorous testing to ensure their safety and effectiveness before they are approved for use. They are made to stimulate immune system.

Types of Vaccines:

Toxoid Vaccine

Live Vaccines

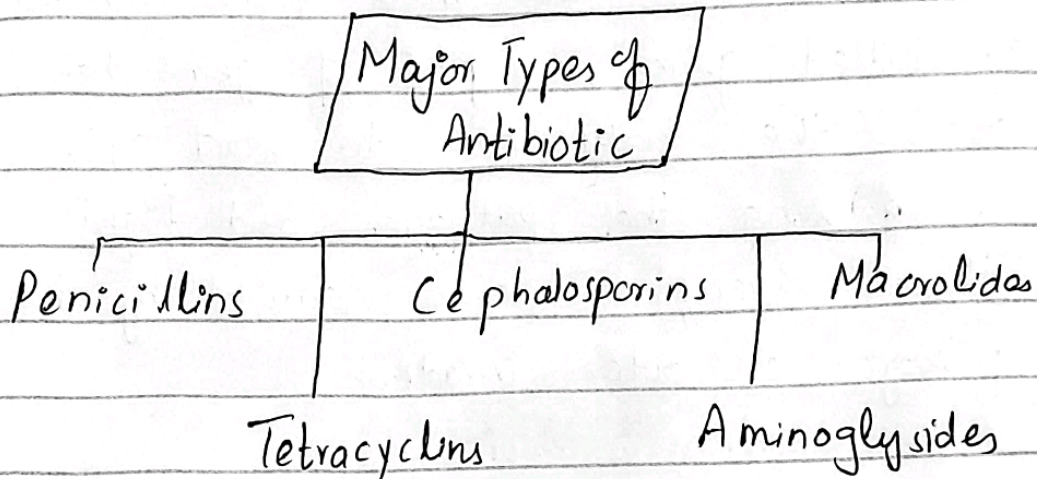
Vaccines

Inactivated Vaccines

DNA Vaccines

ANTIBIOTIC

Antibiotic are used to treat or prevent some types of bacterial infection. They work by killing bacteria or preventing them from reproducing and spreading.



Difference between Vaccine and Antibiotic

(a)

Vaccines stimulate immune system while antibiotic kill bacteria directly

Vaccines stimulate immune system while antibiotic directly kill the bacteria.

Vaccines are target specific while antibiotic specifically for bacteria

The target specification is very important and it made them different.

Vaccines are given before exposure but bacteria after the infection

Vaccines like COVID- vaccine or polio are given before exposure, but antibiotics after infection.

(B)

Differentiation between cyclones, Tsunami and Typhoons.

Answer

Short Overview of Cyclones:

Cyclones are powerful storms that form over warm ocean waters. They are also known as hurricanes. Cyclones are characterized by strong winds, heavy rainfall and cause severe damage.

Short Overview of Tsunami

A Tsunami is a series of powerful ocean waves caused by underwater disturbances, such as earthquake, volcanic eruptions or landslides.

Short Overview of Typhoons

Typhoons are similar to hurricanes and cyclones in terms of their formation. They cause severe damage by developing floods.

Differentiation between Cyclones, Tsunami & Typhoons

(a)

Way of affecting the land is different

Cyclones occur mostly in western Pacific, while Typhoon in western Pa warm oceans. Their levels of targeting and affecting land is

specific.

Mode of action of this trio is different

Cyclones may be characterized by strong winds, heavy rainfall and coastal damage, while typhoon may cause the floods as tsunami may cause the earthquake.

(C)

Short Note on Galaxy

Answer

Overview of Galaxy:

It is composed of hundreds of thousands of stars with gas and dust. Its classification was done by Hubble in 1924.

Classification of Galaxies

Elliptical

Spiral

Irregular

SPIRAL GALAXIES

Spiral galaxies got their name due to their disk like shape.

In this galaxy, the stars, gas, and dust are gathered in spiral arms. About 20% galaxies are spiral.

ELLIPTICAL GALAXIES

They are the most abundant type of galaxies but due to their dimness, and lack of swirling arms, the younger galaxies outshine it.

IRREGULAR GALAXIES

They have no particular shape. They are among the smallest galaxies. The large and small Magellanic clouds are its examples.

Home Galaxy; The Milky Way Galaxy

It is basically the galaxy in which solar system and earth lie. It is spiral galaxy. It is the member of 'local group' which contain 20 galaxies.

(D)

Explanation of DRM

Answer

Disaster and Risk Management (DRM)

The management system to control or work during the conditions of disaster and risk, is known as

DRM or Disaster Risk

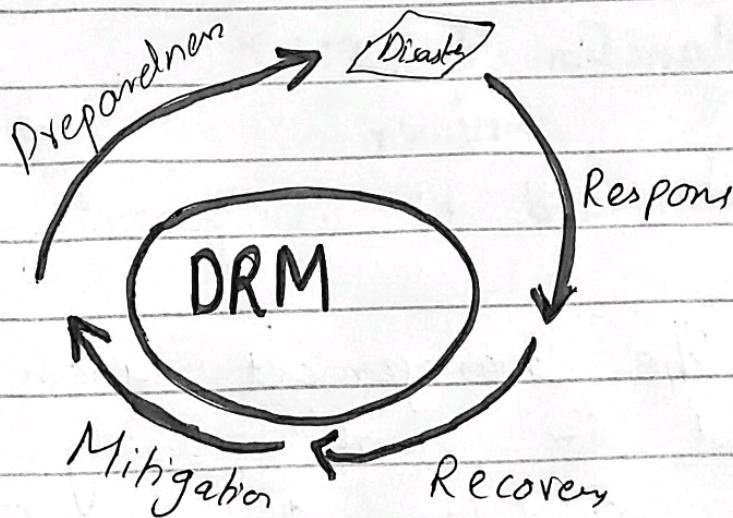
Management. Every country has their own management system

related to DRM.

How DRM works?

To understand the disaster the concepts of hazard, vulnerability and capacity to cope the disaster are must mentioned. And then it works in a cyclic process.

Disaster Management Cycle



Mitigation is the first phase, while preparedness is the second and response and then recovery.

Disaster Management in Pakistan

Pakistan is the disaster-prone country, and so here DRM is established at federal and ~~gover~~ provincial level. The NDMA and PDMA are included in it, which are working to cope the disaster.

Poor Disaster Management makes country more vulnerable; 2022 floods in Pakistan case study

The report of World Report 2022 shows that; "Pakistan" management was already warned about the situation but they have not taken that seriously". The condition shows the poor situation of the country. The loss and damage the lack of capacity of NDMA and PDMA.

Ways to enhance the effectiveness of DRM

- Risk assessment and mapping
Conduct thorough assessments of potential hazards and vulnerabilities in a given area.

- Early warning system
It is important to enhance the early warning system in hazard prone areas of the country.

Question # 02

(A)

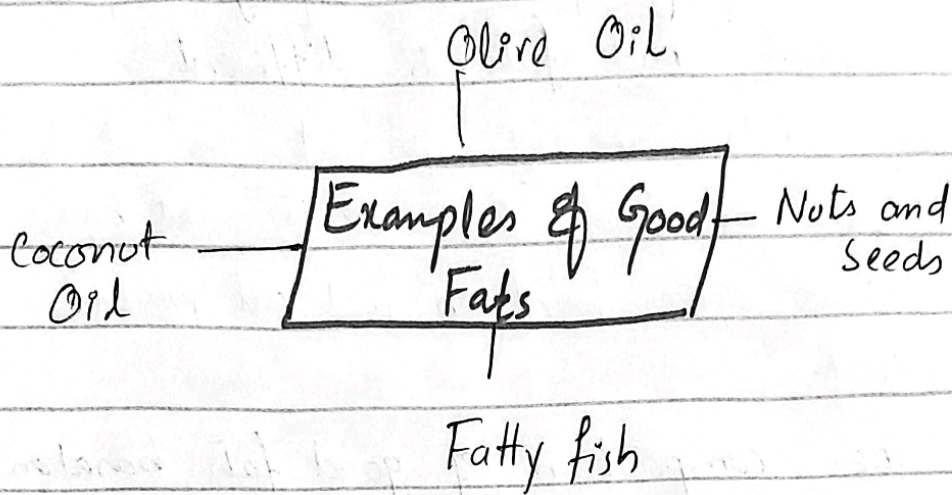
Good fats and bad fats with examples

Answer

What are good fats?

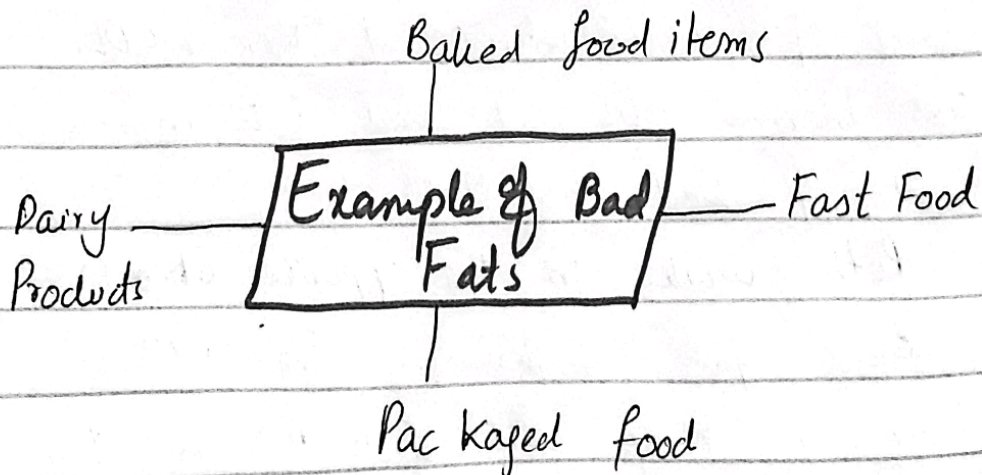
Good fats are also known as healthy fats and they are essential part of healthy and balanced diet. They can improve heart health and

lower bad cholesterol, also supports the brain function, that is why known as good fats



What are bad fats?

Bad fats, also known as unhealthy fats are types of dietary fats that can have negative effects on our health when consumed in excessive amounts.



Differentiation between good fats and bad fats?

- Source of formation of good fats and bad fats is different

Good fats mostly present in natural, unprocessed food like fruits, but bad fats are often found in fried and processed food.

- The composition of good fats based on healthier components as compared to bad fats

Good fats are monosaturated and polyunsaturated and are good for health being, as compared to bad fats, which are composed of saturated and trans fats.

- Effect on cholesterol level of body

Good fats help to control the level of cholesterol, as it decreases LDL, and increases HDL, but bad fats increase level of bad cholesterol.

- Both work in the opposite strands

Good fats work in the well being of body, and bad fats are causing the

(B)

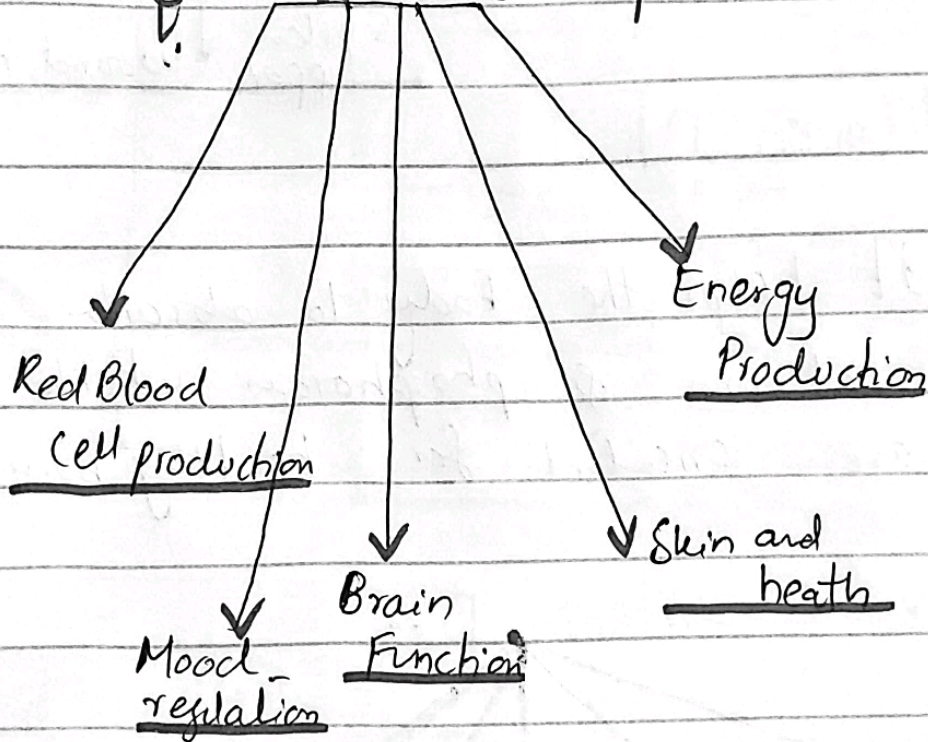
Five uses of each of the following.

Answer

Vitamin B-Complex

It is essential nutrient play role in body's overall health and well being.

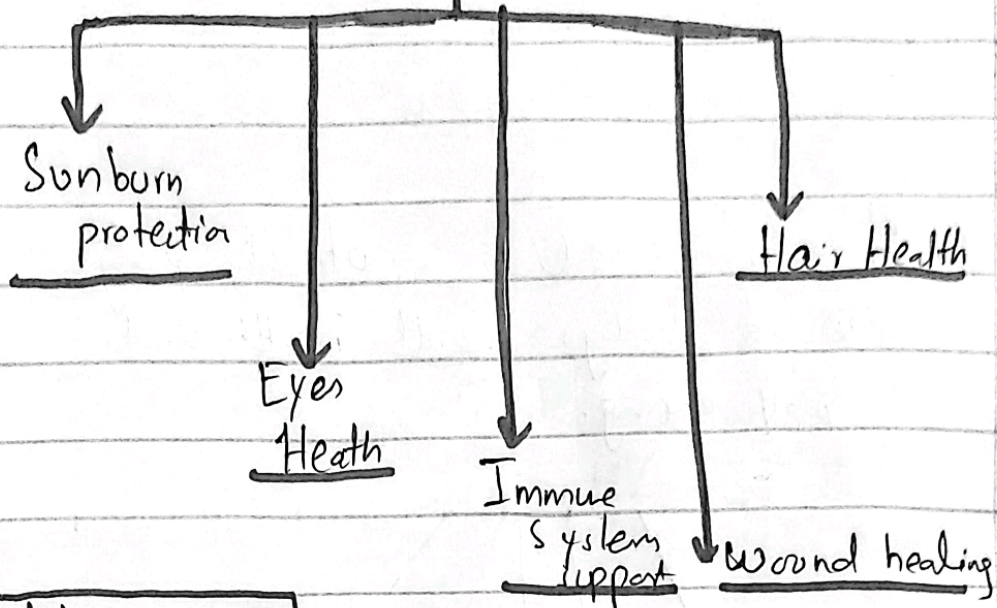
Uses of Vitamin B-Complex



Vitamin E :-

It is a powerful antioxidant that helps protect our cells from damage caused by free radicals.

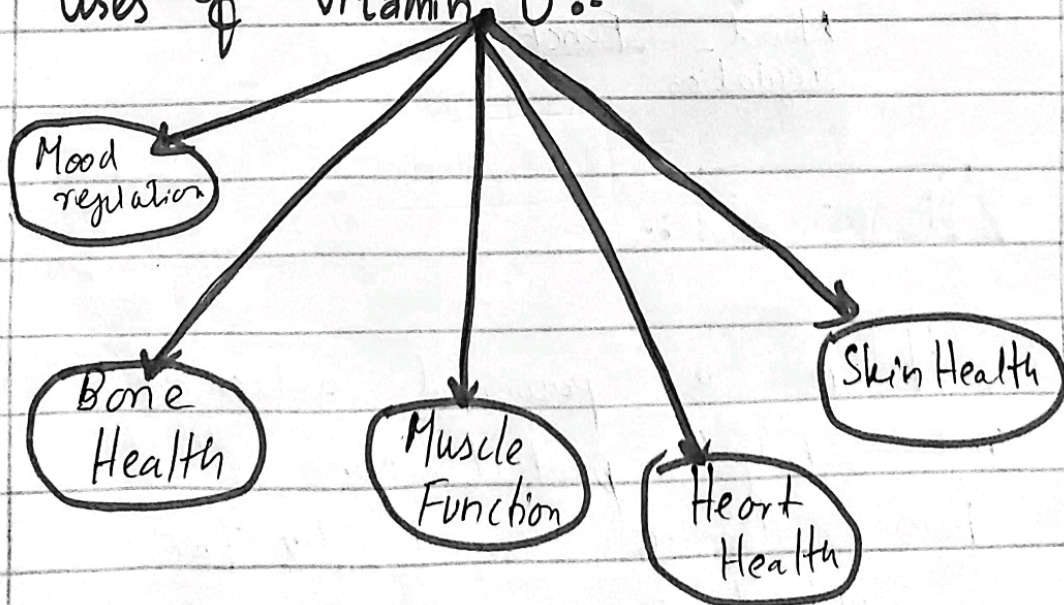
Uses of Vitamin E :-



Vitamin D

It helps the body to absorb calcium & phosphorus which are essential for healthy bones.

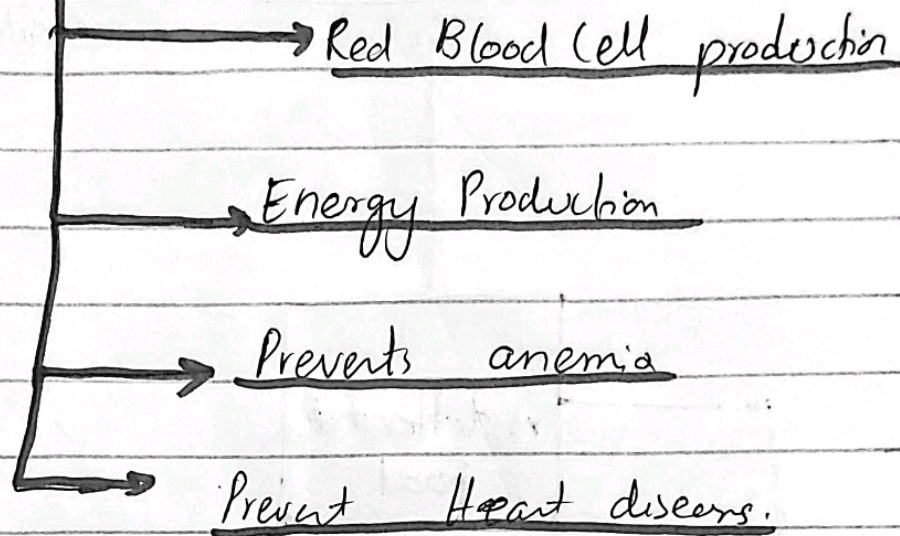
Uses of Vitamin D :-



Iron

It mainly plays its role in red blood cell production.

Uses of Iron



(C)

Food adulteration, types, effects and solutions

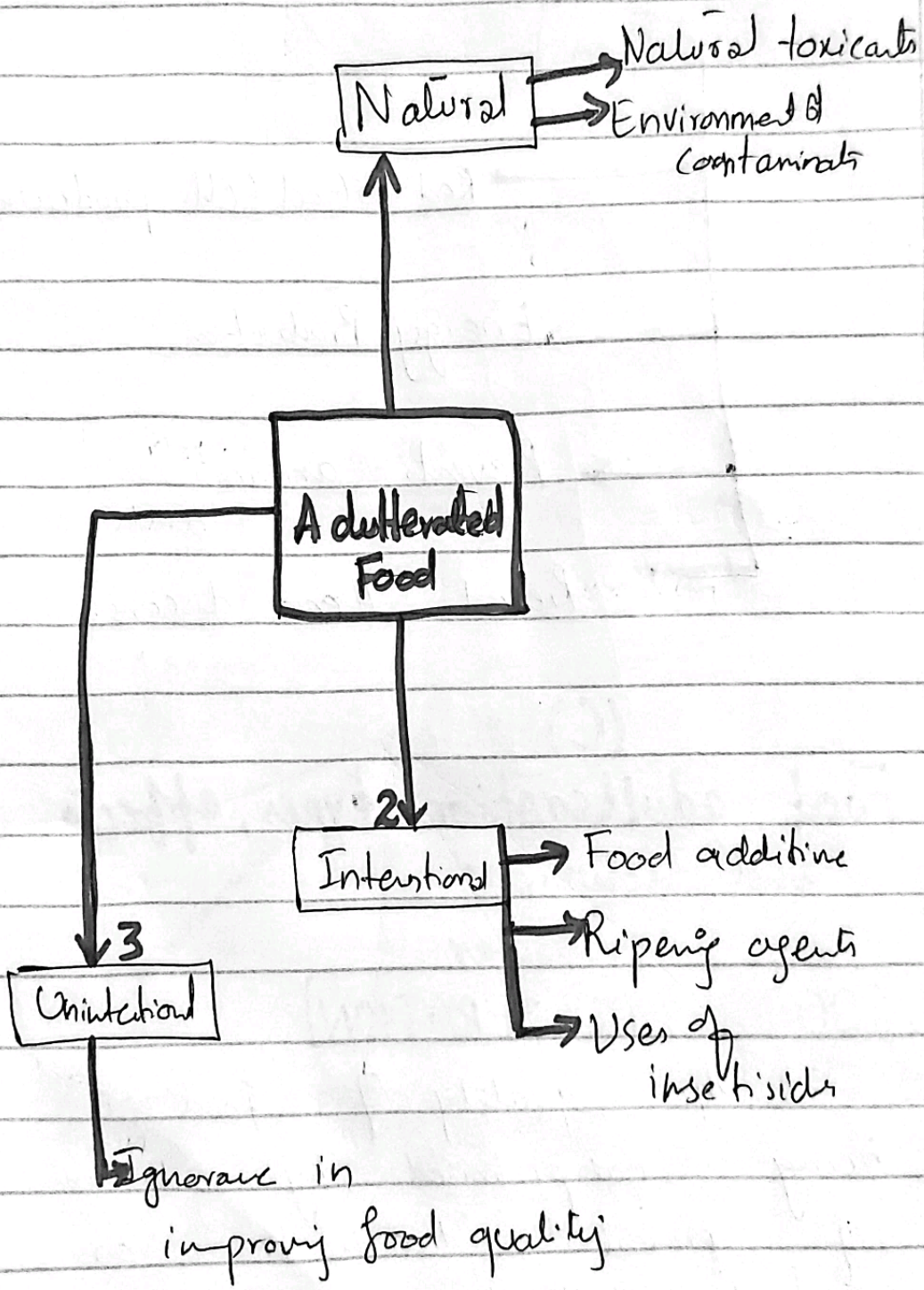
Answer

FOOD ADULTERATION

The quality of food is being compromised by addition of preservatives that is known as food adulteration.

Food adulteration is affecting the body in different ways in different types.

TYPES OF FOOD ADULTERATION



EFFECTS OF FOOD ADULTERATION

Increase health risks

The adulterated food contains chemicals that severely impacts health.

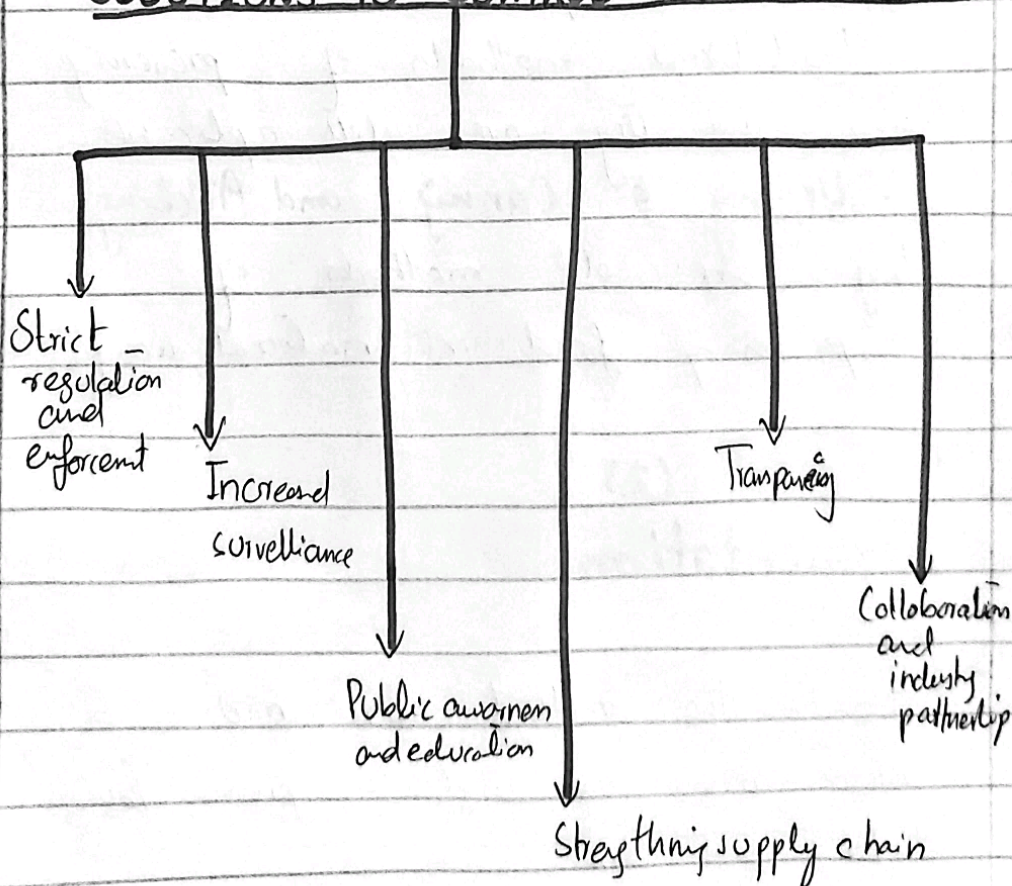
Nutritional deficiencies increased

The fillers or substitutes increase the deficiency of basic nutrients.

Foodborne illness

It also increases the risk of foodborne illnesses caused by bacteria, viruses or parasites.

SOLUTIONS TO CONTROL FOOD ADULTERATION



(D) Five food preservation methods Answer

Food preservation is the term used to describe the methods of preserving foods for the long term, and it is beneficial in many ways.

(1) Natural Food Preservation

There are different old and traditional methods of preserving food and they are still applicable.

• Drying, Canning and Pickling they are old methods of preserving food in natural way.

(2) Fermentation

It is the method where bacteria or microorganism are used to preserve food for long term.

(3)

Freezing

The freezing is the method in which the temperature is lower down so that no bacteria can grow there, and it is the common way of preserving food.

(4)

Chemical Preservatives

Different chemicals like nitrites or antioxidants are used to preserve the food. This method is basically used at the industry level. It help to increase the shelf life of the food items.

(5)

Drying

The process involves the removal of moisture, so inhibits the growth of bacteria to prevent food.