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## Question no 2

(A)

### VACCINE

### ANTIBIOTICS

#### DEFINATION

Vaccine is a biological preparation that improves immunity to a particular disease.

Antibiotics are chemical compounds used to kill or inhibit the growth of infectious organisms.

Ex.

#### Working

Vaccine work very well. Of course, no medicine is perfect but most childhood vaccines produce immunity about 90-100 percent.

Antibiotics prevent bacteria reproduction and spreading. For example, by disrupting the project bacteria use to produce new cells.

#### Side effect

Some vaccines may cause mild reaction such as soreness when

Antibiotics cause allergic reaction. One person in

the shot was given...  
or fever, but serious  
reactions are rare

15. was allergic reaction  
especially due to  
penicillin and cephalo-  
sporin.

### Food Safety

Vaccine has no issue  
regarding food safety

Presence of antibi-  
otics residues in  
food products.

### Prophylactics effect

Effects of vaccines  
are long-lasting

Antibiotics effects  
are no long lasting  
after treatment.

### Examples

Examples are Polio  
drops, measles vaccine

Examples are strept-  
omycin, erythomy-  
cin.

### (B)

### Difference

#### Cyclones

#### Tsunami

#### Typhoons

### Introduction

Generic term  
for rotating low  
press weather

Large ocean wa-  
ves typically cau-  
sed by under-

Same as  
hurricanes but  
specifically

Date: \_\_\_\_\_

Day: \_\_\_\_\_

systems

waves earthquakes,  
land slides, volcanic  
eruption etc.

refer to those  
forming in  
the northwestern  
Pacific ocean

### Geographical location

Term used for  
storms in the  
southwestern  
Pacific and  
Indian ocean.

Occur in any  
large body  
of water, not  
confined to pac-  
ific ocean region

Occur in  
north Pacific  
Ocean.

### Cause and Nature

Atmospheric  
phenomena charac-  
terized by strong  
winds and heavy  
rain

Tsunami result  
from seismic ac-  
tivity under the  
ocean.

Characterized  
by strong  
winds and  
heavy rains

### Impacts and Damage

It can cause ex-  
tensive damage to  
coastal areas through  
high winds

It can inflict  
damage primarily  
through  
powerful waves  
reaching coast-  
lines.

It can  
also cause  
extensive  
damage to  
coastal areas  
as through  
winds.

(C)

## Short note on Galaxy

### Defination:

"A Galaxy is a gravitionally bound system of stars, stellar remnants, interstellar gas, dust and dark matter".

### Types:

Galaxies are catagorized according to their:

(i) Size

(ii) Morphology

### Size:

(i) Dwarf galaxy:

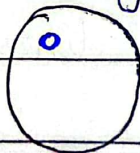
Dwarf galaxy is with just a few thousand stars.

(ii) Giant galaxy:

Giant galaxy is with minimum 10 trillion stars.

### Morphology:

(i) Elliptical: Elliptical galaxies lack the swirling arms of their more well known siblings. They bear a round shape



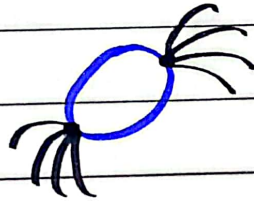
## ii) Spiral galaxies:

In a spiral galaxies, the stars, gas and dust are added/gathered in spiral arms, that spread outside from galaxy center.



## ii) Irregular galaxies:

They have no particular shape. About 20% of all the galaxies are irregular.



## Examples:

Milky Way and Andromeda are the example of galaxies.

Milky Way is the large, disk-shaped galaxy that includes our solar system.

(D)

DRM

DRM stands for Disaster Management.

Date: \_\_\_\_\_

Day: \_\_\_\_\_

"Disaster Management: can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies."

### Disaster Management Cycle:

The disaster management cycle illustrates the ongoing processes such as:

#### Mitigation:

Mitigation activities actually eliminate or reduce the probability of disaster occurrence, or reduce the effect of unavoidable disaster.

Mitigation measures include building codes, zoning and land use management, preventing health care and public awareness education.

#### Preparedness:

During Preparedness phase, government, organizations, and individual save life plans and minimize disaster management and enhance response operations. It

includes warning system, mutual aid agreements and public information and education.

### Response:

The aim of emergency response is to provide immediate assistance to maintain life, improve health and support the morale of affected population.

### Recovery:

As the emergency is brought under control, the affected population is capable of undertaking a growing number of activities to restoring their life and infrastructure.

## Question no 2

(A)

### Difference

Good fats

Bad fats

### Chemical Structure

Good fats have double bonds between carbon

Bad fats have no double bond

atoms, which create a link in the fatty acid chain. This can be either monosaturated and poly-saturated.

and have a straight structure.

### Sources

They found in plant based oils (olive oil, canola oil), nuts, seeds and fatty fish.

They mainly found in animals products like meat, dairy and some tropical oils.

### Health Impact

It associated with cardiovascular health, reduce inflammation and other health benefits.

It linked to increased risk of heart diseases, stroke and other cardiovascular problems.

It is liquid at room temperature.

It may be solid or liquid at room temperature.



**(B)****Uses****(i) Vitamin B-Complex:**

- (a) Vitamin B-complex are essential for converting food into energy.
- (b) It play a crucial role in cell growth and division.
- (c) It also help in maintaining health of nervous system.
- (d) It often include in promoting healthy skin, hair and nails.
- (e) It involved in the synthesis of neurotransmitters.

**(ii) Vitamin E:**

- (a) Vitamin E serve as a powerful antioxidant.
- (b) It is also known for its role in promoting skin health.
- (c) It also support immune system.
- (d) It plays a role in maintaining eye health.
- (e) It also help in cardiovascular activities.

## Vitamin D:

- (a) It plays an important role in the absorption of calcium.
- (b) Adequate level of vitamin D are essential for bone mineralization.
- (c) It involves to support immune system.
- (d) Vitamin D is important for muscle functions.
- (e) It also regulate cell growth.

## Iron:

- (a) Iron is a central component of haemoglobin. It helps in oxygen transport.
- (b) Iron is a part of myoglobin which produce energy.
- (c) Iron is involved in the proper functioning of immune system.
- (d) Iron is necessary for the development of brain.
- (e) Iron is co-factor for enzymes involved in DNA synthesis and cell division.

(c)  
**Food adulteration**

**Defination:**

Food adulteration is an act of intentionally debasing the quality of food offered by the sale either by admixture or substitution of inferior substances.

**Types:**

- (a) Poisonous or Deleterious Substances
- (b) Filth and foreign matter
- (c) Economic Adulteration
- (d) Microbiological Contamination
- (e) Intentional contamination
- (f) Incidental contamination.

**Effects and Solutions:****Effects:**

- (a) Consuming adulterated food can pose significant health risks.
- (b) It can result in a reduction of essential nutrients in the food.
- (c) Contaminated or adulterated food may cause food poisoning.
- (d) It also cause long term health

issues.

**Solution:**

- (a) Implement and enforce strict regulation, governing food safety.
- (b) Increase awareness among the public about the risks associated with it
- (c) Enhance transparency in food supply chain to track and trace the source of ingredients.

(D)

## FOOD PRESERVATIVE

### METHODS

Food preservation methods are:

#### 1- Refrigeration:

Keeping food at temperatures slows down the growth of microorganisms and helps prevent spoilage.

Refrigeration is effective for perishable items like:

- (a) Dairy products
- (b) Meats
- (c) Certain fruits and vegetables.

#### 2. Canning:

Canning involves sealing

food in airtight containers and heating them to destroy bacteria, yeasts and molds. This method is commonly used for:

(i) Preserving fruits

(ii) Preserving vegetable and sauces

### (iii) Chemical Preservation:

Chemical preservation is another effective method to store food to prevent spoilage and microbial growth. Common chemical preservatives include:

#### (a) Salt:

Used in pickling and curing meats

#### (b) Sugar:

It acts as preservative in jams, jellies etc

#### (c) Acids:

It inhibit~~and~~ bacterial growth and are used in preserving fruits and sauces.

#### (d) Antioxidants:

It prevent oxidation and help to preserve the colour and quality of certain foods.