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Q: 1 A

1 A: i Definition of Va

Very Good Effort.  
Please consult  
during discussion  
class for further.

Vaccines are the dead or ~~inactivated~~ microorganisms that are used to provide immunity and prevent any specific disease.

Example:

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Vaccines made for Hepatitis B and C viruses

1A(ii) DEFINITION OF ANTIBIOTICS

Antibiotics are ~~the~~ chemical substances that is made to treat bacterial, viral and fungal infections

Example

Penicillin, cephalosporins

1A(iii) DIFFERENCE BETWEEN  
VACCINES AND ANTIBIOTICS

## VACCINES

a- Vaccines are dead or inactive microorganisms that are used to prevent any disease or boosting immunity

b- Vaccines can be given orally or by injections

c- Vaccines may have allergic reactions potential when given to people

d- Vaccine's effect is prolonged and it is mainly used once and the disease may not occur again

e- Vaccine can only prevent the onset of viral disease

## ANTIBIOTICS

a- Antibiotics are the chemical substances used to treat any specific viral, fungal & bacterial diseases

b- Antibiotics can be given in any form such as tablets, drops, injections

c- Antibiotics can do allergic reactions as well as side effects such as nausea, vomiting and diarrhea

d- The action of antibiotics is only remained during a particular time of disease and it may not prevent person from that particular disease. The disease may occur again

e- Antibiotics treat ~~both~~ all viral, bacterial and



it cannot prevent bacterial  
disease ✓

fungal ~~disease~~

f Vaccine provides and increases  
immunity ✓

f- Antibiotics do not provide  
immunity. It only treats  
specific disease.

g- Examples:  
Vaccines for ~~Hep B, C,~~  
polio viruses and Covid-19  
viruses

Example  
• Penicillin  
• ~~cephalosporin~~  
• Tetracycline

Q: 2 A

What is meant by :

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## GOOD AND BAD FATS

Good fats are those fats which help the body  
to remove <sup>cholesterol</sup> ~~fats~~ through liver. They are called High  
Density lipoproteins

Bad fats takes cholesterol to the arteries and  
collect the cholesterol in the arteries. They are called  
low density lipoproteins ✓

Good FatsBad Fats

occur in  
near Japan

East and West US  
the rest of the

ial cycle

a- Helps to remove extra fat  
from the body, cells, arteries.

b- It intake extra  
fat to the arteries, cells any  
in body

b- Good fat helps to remove  
cholesterol from the arteries

b- Bad fat deliver excess  
cholesterol to the arteries

c- It remove cholesterol present in  
the plaque, fatty deposit form  
by the cells. Low Density lipoprotein  
intake

c- Its intake causes the  
accumulation of cholesterol in  
the arteries called plaque

d- Good fat do not cause  
disease

d- Bad fat causes heart  
disease, blood pressure  
and liver disease

e- Good fat is of mainly  
two types monounsaturated  
and polyunsaturated fat

e- Bad fat are saturated.

f- It is found in olive oil,  
peanut oil, fish

f- It is present in beefs  
and butter mainly



→ Good fats are also called  
High density lipoprotein ✓

- Bad fats are also called  
Low-density lipoprotein ✓

Q: 2

B

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(i) Vitamin B complex:

Uses:

- a) It helps in the formation of blood
- b) It helps in the <sup>protection</sup> formation of mucous membrane ✓
- c) Vitamin B complex makes heart stable
- d) Vitamin B complex helps in the smoothing of skin
- e) It is help in reducing anxiety or depression ✓

(ii) Vitamin E uses:

- a- Vitamin E helps in making blood cells ✓
- b- Vitamin E helps in the brightening of skin
- c- It helps in boosting immunity
- d) Vitamin E helps in scar healing ✓
- e) It helps in preventing heart disease

### (ii) Vitamin D uses:

- a. Vitamin D helps in making bone strong
- b. Vitamin C helps in bringing energy
- c. It helps in regulating the absorption of vitamin C that is food for teeth and bones
- d. Facilitates immune system to work
- e. helps in making teeth strong

### (iii) Iron:

- a. Iron helps in blood formation
- b. Iron helps in growth and development of body
- c. Iron provides oxygen to muscles
- d. Iron helps in making hormones
- e. Iron improves sleep quality

Q: 2

## D FOOD PRESERVATIVE

### METHODS

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Food preservative methods help to prevent food from spoilage and making it efficient and healthy to stay for a long time



## Methods for Food Preservation

### (i) Freezing

Food can be preserved through freezing. Freezing helps to inhibit bacteria to enter the food and prevent bacteria from multiplying and spoil the food.

### (ii) Canning

Canning is also the method of food preservation. It does not provide moisture and oxygen that does not allow the bacteria to grow and multiply when the bottle or the can is sealed.

### (iii) Digging underground

Food can be preserved underground where there is no moisture or the oxygen that help bacteria to grow and multiply.

Potatoes are mainly underground and preserve by this method.

### (iv) Salting the food

Food can be preserved by putting some salt in the food. It will not allow the bacteria to grow and multiply.

## V- Vacuum Packing

Vacuum packing is also used to preserve food.

The air is removed from the material where food is inserted creating a vacuum. It would not allow the microbes to

live and multiply as there is no oxygen or carbon dioxide.

Dry fruits are mainly preserved by this method.

Q: 2 C

## FOOD ADULTERATION

### Types 1 Definition

Food adulteration is the practice of contamination of food materials by adding few substances that are collectively called Adulteration. It is used for economical and technical benefits

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## I Types of Food Adulteration

### A- Intentional Adulteration

When the substance that look similar are added to the food, it increases the weight and gain more profit

Example:

Mixing of pebbles, stones, marbles, water.



## B- Incidental Adulteration

It occurs due to the negligence while handling food.

Example

- a- residue of pesticide in grain
- b- larvae growth

## C- Metallic Adulteration:

Addition of metallic materials into food. It may occur intentionally even accidentally.

Example

Lead or mercury in the food

## D- Packaging Hazards:

Packaging materials in which the food is packed may interfere and mix with the constituents of the food that lead to packaging hazards

## Impact of Food Adulteration

- a- Food adulteration ~~too~~ increases toxicity in the body
- b) Food adulteration ~~decreases~~ the nutritional value of the food
- c) Food adulteration may affect the organs and lead to heart, kidney, liver disorders

d- Food adulteration such as milk adulteration may harm the ✓ childrens

## III- HOW TO PREVENT FOOD ADULTERATION

III a Food adulteration in ✓ industries may be prevented through strict laws and government interventions

III b- Wash the fruits and vegetables before ✓  
cooling ✓

III c Awareness ✓ must be given to the citizens through media.

III d Government must invest in tech-savvy metrodepts that ✓ support food safety, elevating food manufacturing infrastructure

Q: 1c

## GALAXY

Galaxy is the fundamental unit of the universe. It consists of ✓ hundreds and thousands of stars with gas and dust.



## Classification OF Galaxies: According to Shape:

### a- Elliptical Galaxies

Elliptical galaxies are the ~~the~~ most abundant type of galaxies. Due to their age and dim qualities, they are outshone by younger, brighter collection of stars

Example

E0 to E7

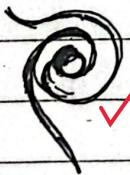
### b- Spiral Galaxies

The stars, gas and dust are gathered in spiral arms that spread outwards from the galaxy center.

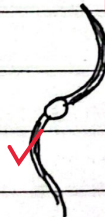
They are classified on how tightly they wind their spiral arms are S<sub>a</sub>, S<sub>b</sub>, S<sub>c</sub>.



S<sub>a</sub>



S<sub>b</sub>



S<sub>c</sub>

"Milky way", where we live in also a spiral galaxy

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### C - Irregular Galaxy

The galaxies that have no particular shape.

They are the smallest galaxies and full of dust and gas. Their star formation are due to the presence of gas and dust

### Black Hole:

Many galaxies are thought to have certain black holes in the centre. Black hole has very high density and gravitational pull that it is difficult for any thing even light to escape from it

Q1-

B

### TSUNAMI

#### Definition

A series of waves that are produced due to the sudden disturbances under the water's surface in bodies

Tsunami. They are also called seismic waves

#### Causes of Tsunami:

- a) Earth quakes
- b) Volcanic erupting
- c) Asteroids crashing the ocean
- d) Under sea land slide



## Formation of Tsunami:

① Tsunami occurs when an earthquake vertically shifts the seabed by several meters, displacing hundreds of kilometers of seawater.

2- Large waves began rippling across the ocean away from earthquake's epicenter

3- In deep water tsunami moved at speed of up to 500 km/h.

## Characteristics of Tsunami

Distance from one wavelength to another is between 100 and 300 km. wave height small in the open sea.

• they can travel up to 1000 km/h. They are not dangerous in open deep water.

However, in coastal areas, water level is shallow, the wave will slow down but the height increase up to 30 meter high.

## CYCLONE AND TYPHOONS

Both cyclones and typhoons are the tropical cyclones. They originate over the oceans in tropical and coastal regions.

## Typhoons:

type of tropical cyclone that occur in western North Pacific especially in near Japan

## Cyclones:

The region except Japan, East and West USA, and the western North Pacific, the rest of the areas may have cyclones.

## Formation of Tropical Cyclone:

In every cyclone there is

- a, low pressure area
- b, High pressure area

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Outer area of cyclone consists of cool air coming from high pressure area which surrounds the central pressure area. It is called the eye of the storm