

Question no: 1

A.

Difference between Vaccine and Antibiotics.

Both Vaccine and Antibiotics are used to treat different types of infections. Antibiotics are the molecules or compounds that are used to treat bacterial and fungal infections.

On the other hand Vaccines are the inactivated or dead micro-organisms that provide immunity against viral infections.

Types

Antibiotics like Penicillin, amoxicillin or tetracyclines are used to treat infections caused by bacteria.

Vaccines also have many types. It can be categorized into Dead or Inactivated Vaccines,

DNA vaccines, Toxoid vaccines
or live vaccines.

Structure :

Antibiotics are made up of really small molecules but the vaccines can be ^{made of} smaller or large molecules depending upon the type of vaccine.

Sources :

Antibiotics can be derived from synthetic or semi-synthetic sources. Vaccines are derived from dead or inactivated microbes.

Side-effects :

Over-use of Antibiotics can develop resistance against bacterial infections. It can also cause nausea, drowsiness, ^{and} headache etc. On the other hand, vaccine may cause some allergic reactions.

Examples :

Antibiotics : Penicillin, Amoxicillin, Tetracycline

Vaccines : Vaccine of Polio, HIV, Corona etc.

C. Write a short note on Galaxy

Galaxy is a collection of stars, dust, huge amount of gases and the solar system. Scientist think that there are about one hundred billion galaxies in our universe. They can be of many shapes and sizes.

Examples:

Milky way galaxy and Andromeda galaxy. Milky way galaxy is Earth's galaxy.

Types and shapes of galaxies

Spiral galaxies:
As by its name, these galaxies have a spiral shape. Milky way galaxy is included in this. It contains dark matter, holes and stars.

Elliptical galaxies

As by its name, these galaxies

have an elliptical shape

They are less common than the spiral galaxies. They contain little gas and dust. In these galaxies stars orbit around in random direction.

Irregular galaxies

They have weird shapes like toothpicks, rings or grouping of stars.

They have significant amount of gas and dust.

There are other types of galaxies also like the active galaxies, lenticular galaxies and Blazars.

D.

Explain DRM

Disaster Risk Management (DRM) is a systematic approach to counter, strategise and implement certain measures to counter disasters such as

floods, earthquakes, cyclones, and all the related natural disasters.

Stages involved in DRM.

(i) **Pre-planning or pre-preparedness.**

This stage involves planning about a certain calamity even before it has arrived. This can be achieved by analyzing, and seeing the past experience of a certain disaster about its time and nature. In this stage all the analysis is done about the disaster and collaborative efforts are taken to ensure that all the things are ready before a certain disaster.

(ii) **Planning and Execution**

In this stage when a certain disaster has wreaked havoc, it is to counter it as early as possible and to avoid losses and to make sure ~~minimum~~ loss.

is minimum. This can be achieved by proper execution of a certain plan.

(ii) Operation and Recovery

This is the last stage.

Quick recovery planning is implemented and operation technique are implemented to ensure safe recovery of humans and their entities.

Advantages of DRM

(i) DRM is crucial it avoids any huge losses and best efforts are made to ensure the safety of everyone.

(ii) Better decisions are made in order to avoid any risks.

Because without planning or ^{better} decisions, one cannot avoid risks.

(iii) DRM reduces unexpected event meaning that no more events during a calamity can occur.

B.

Cyclones:

Cyclones are basically systems of rotating winds around a low pressure due to pressure gradient and Coriolis effect.

Tornado:

A tornado is basically the funnel shaped system of winds extending around the earth crust to the cloud.

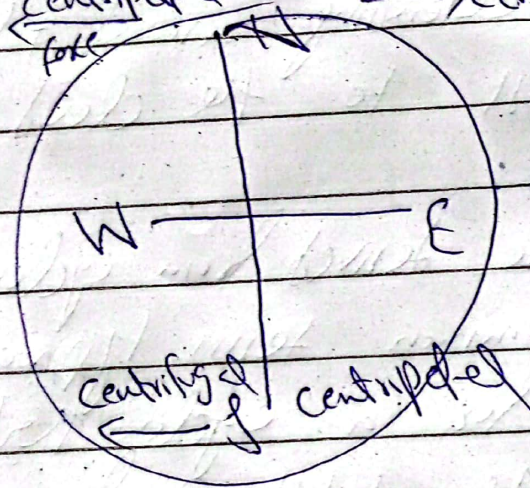
Typhoon:

These are derived from cyclones. The common term 'typhoon' is used for a cyclone that forms in the West Pacific.

Difference between cyclone and Tornado

Cyclones are formed by the pressure gradient and the Coriolis effect. When both of these effects are coupled a cyclone is formed. The Coriolis effect

makes the wind to move in the right direction of Northern hemisphere and to the left of Southern hemisphere. This Coriolis effect is sometimes called as centrifugal force. Centrifugal force is outward force on the mass or object moving in a circular path.



On the other hand, tornadoes form a large thunderstorm. Inside thunderclouds, warm humid air rises and collides with cool air. This imbalance the system of winds and a tornado is formed.

- Both are different and ^{many of} the differences can be discussed below
- (i) Cyclones form over water while tornado form over land.
 - (ii) Cyclones are huge 60-100 miles across. Tornadoes are relatively small ^{upto} across 2 miles.
 - (iii) Wind speed in cyclone is less than 200 mph. and in tornado it is about 300 mph.

Question: 2.

A Good fats and bad fats

Good fats are those which are healthy for our body and bad fats are those which are unhealthy for body.

Monosaturated or Polyunsaturated Fats - Good Fats

These type of fats are good fats. These are essential fats because

They are needed from food.

Plant-based foods and oils are

Primary source of mg .

A certain type of fat

omega-3 fatty acid has

been considered as a good fat.

Sources of good fats

Nuts, vegetable oils, peanut

butter, almond butter, ~~and~~

avocados, salmon, ~~fish~~^{fish} and chia seeds.

Benefits:

- (i) Improve Blood cholesterol level.
- (ii) Decreased risk of cardiovascular disease.
- (iii) Coronary artery disease.

Bad fats: Saturated and trans fat

These are harmful for our

health. The food which

contains these fats are

solid at room temperature.

Most saturated fats are

Animal fats.

Sources:

- (i) Pally cuts of beef and lamb
- (ii) Pally skin of chicken, potatoes
- (iii) butter, cheese, ice-cream, donut
- (iv) palm oil, coca butter, fried food, and processed food.

Effects

- (i) Increased heart attack
- (ii) Can increase blood cholesterol level
- (iii) Increases level of bad cholesterol

B

Uses of

Vitamin B Complex

- (i) healthy digestive tract
- (ii) red blood cell production
- (iii) healthy skin, hair, probiotics
- (iv) Immune system
- (v) energy production

Vitamin D

- (i) Bone health
- (ii) Dental health
- (iii) Tissue health
- (iv) Immune health
- (v) healthy heart

~~Vit~~ Vit C

- (i) keeps wounds
- (ii) Brighter skin
- (iii) Fight against infections
- (iv) Iron absorption
- (v) Immune system support

Iron

- (i) Muscle activity
- (ii) helps deliver oxygen to body
- (iii) Reduces fatigue
- (iv) Restores sleep
- (v) Improves concentration

(c) Food Adulteration

Food Adulteration is any kind of process that changes the colour, taste and original shape of the food.

Types:

- (i) Intentional (mixing chemicals, inferior substances)
- (ii) Incidental
- (iii) Microbial Contamination (physical, chemical or bacterial)

Effects:

- (i) Food poisoning - stomach disorders, cancer
- (ii) down-graded quality of food.
- (iii) Can affect human health (liver, kidney)

Solutions:

- (i) Avoid dark colored, junk and processed foods
- (ii) Check if seal is valid or not.
- (iii) Wash and clean vegetables properly
- (iv) Role of government to have a check and balance on those who are involved in adulteration.

D.

Food Preservation method:

Food preservation methods are used to store food and preserve it for a long time.

(i)

Canning:

Food is stored in cans by heating and sealing it in containers.

(ii)

Drying:

In this method food is dried under sun or heat.

(iii)

Freezing:

In this method, food is frozen at a lower temperature to destroy organisms responsible for spoilage.

(iv)

Curing (Salt)

Packing salt around food pulls out any moisture in the food.

(v)

Dehydration

In this method water is removed from the food to preserve it for long time.