Question # 1

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Vaccines vs. Antibiotics

Please Discuss.

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Vaccine:

A substance taken in into body in order to increase its immunity against a particular virus is called a vaccine. For example, in order to build immunity against coronavirus, Pfyzer vaccine is taken up.

Anti-biotic:

Anti-biotic is a substance that is taken up to hinder the growth of harmful microorganism inside the body.

Differences between Vaccine and Antibiotic

Vaccine	Anti-biotic
Prevents harms that are caused by viruses	Prevents harms caused by bacteria or any other living microorgs

	Vaccine	Anti-biotic
(i)		
(ii)	It is a one-time intake and ensures protection from the same virus for a lifetime	It needs to be taken up ~~utho~~ again when the symptoms show up again
(iii)	It is highly specialized	It is comparatively less ~~specialized~~ specialized.
(iv)	It is generated from the antedate of virus and resembles the virus it aims to contain	It is generated to stop the growth and multiplication of microorga and does not resemble the specie it attacks in any way.

(B) Differentiate between cyclone, Tsunami, and typhoon.

→ Typhoon is a different name that is used for cyclone in areas like Japan, China, and other far-east nations. Henceforth, the differences are listed between a cyclone and Tsunami only.

	Cyclone/Typhoon	Tsunami
(i)	It is a phenomenon in which differences between the air pressure causes huge circulation of the wind	It is a phenomenon in which large waves are formed in water bodies that affect humans
(ii)	It is a phenomenon created between earth and air	Tsunamis generate inside water bodies and extend to land.
(iii)	It is a result of air pressure between two spots.	It is a result of severe earthquake or seaquake.
(iv)	It can be visualized as fast-moving wind that moves rapidly and cause damage to humanity	It can be visualized as giant ocean wave of the wavelength 300 km that either sucks everything into the sea or fills the land with water.

(c) # Short Note on Galaxy

Galaxy is a word originating in ancient Greece which means "milky". Scientifically, galaxy is a group of stars that has its own gravitational pull and centre. It can be of any size depending upon the amount of stars it contains. It may have a few thousand stars and be called as dwarf or it might have over a trillion stars and be called giant. Talking particularly about the milkyway galaxy, i.e, the galaxy which contains solar system, it is a medium galaxy. It is disk-shaped and contains 300-500 billion stars. It has four arms that are termed as Sagittarius, Centaurus, Perseus, and Norma. Solar System lies at the Orion spur which is the minor arm of galaxy.

(iv) Explain DRM.

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Explaining DRM.

DRM is an abbreviation for Disaster Risk Management. It is a step in the process of disaster management that focuses on risk mitigation.

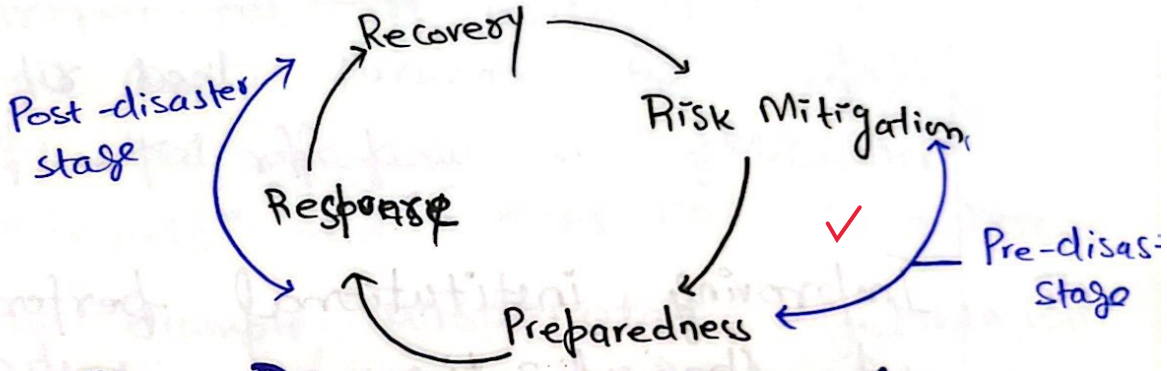

Fig: Disaster Management

Concept of Risk Management

Risk management refers to a point in the disaster management where steps are taken to minimize the risk of the occurrence of disaster in the first place. Simply, it is a pre-disaster measure that reduces the probability of a disaster.

Steps for Improving DRM:

(i) Capacity building is the most needed step for disaster risk management - It enables the disaster managers to have enough resources to cope up with disasters.

(ii) Conducting Research and Development in the area of disaster and risk mitigation is an important step. It ensures that up-to-date knowledge is used for the purpose

(iii) Improving institutional performance and specialization also helps to mitigate risks. It ensures that qualified professionals are the front-liners of the process.

(iv) Enhancing efficiency and effectiveness in the process is essential. It makes sure that optimal amount of resources are utilized and desired outcomes are observed during the process.

Question # 2

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(i) Good fats and bad fats

Fat refers to an organic compound either builds inside the body or taken up via food to meet the nutrient requirement of the body.

The Good Fat:

Good fat is the type of fat that fulfils body's needs for nutrients and does not cause harm. For example, unsaturated vegetable oil is an example of good fat. It provides body with necessary nutrients.

The bad fat:

Fats that are bad for the body if taken in excessive amount are called bad fats. Cholestrol, for example, is a bad fat. In excess amount, it makes plaque in the artries and causes severe health risks like heart attack, brain stroke, etc. This is why it is termed as bad fat.

(c) Food adulteration...

Food Adulteration:

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Intentional addition of an inedible substance in food is called food adulteration.

Types of Food Adulteration

(i) Poisnous: This is the addition of poisnous substances in the food. It is very harmful and risk of life is involved in it.

(ii) Filthy: It is the addition of pollutted substances inside food that one would otherwise ~~would~~ not eat. It may include pebbles, stones, or any other undesirable substance

(iii) Economic: In this ~~way~~ type, economic gains are targetted by the process of food adulteration. For example, companies adding food colors to attract customers is targetted for economic gains.

Effects of food adulteration

(i) Health risks: Food adulteration can cause severe health risks including food poisoning, digestive tract issues, and even death.

(ii) Violence of Consumer ethics: Food adulteration violates the consumer ethics by selling the non-food items with food.

(iii) Environmental risks: Environment can also face severe risks due to the process of food adulteration.

Solutions of food adulteration

(i) Practising strict legal control: Governments need to maintain strict control over the purity of the food and those responsible in food adulteration must be held accountable.

(ii) Promoting ethical practices in sale and purchase: Small business-owners and food-sellers must be incentivized to focus on the quality of food.

(iii) Increasing Consumer awareness: Governments must conduct campaigns on educating the public about what they are consuming.

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(iv) # Food Preservation Method

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1- Food preservation:

Food preservation is the process of preserving edibles to save them for later consumption- it maybe for short-term or long-term depending upon the requirement-

2- Methods of Food Preservation

(i) **Heating:** Food is heated at a defined temperature and then kept in a closed container- This is utilized for short-term food preservation-

(ii) **Freezing:** On this method, food is frozen quickly and kept inside the freezer for longer periods- For example, meat is preserved in this way-

(iii) **Adding ~~Sugar~~ Acid:** On this method, ~~sugar~~ acid is used to increase the immunity of the food against micro-organism. This, in turn, increase ~~food~~'s life-

(iv) **Adding Salt and Sugar:** Salt and Sugar are used within food to increase its edibility period as they prevent against bacteria

(v) Canning: On this method, food is stored in large or small cans which are tightly packed. It prevents the chemical reaction that oxidate food and hence, is a preservation method

(B) Uses of Vitamins

(a) Uses of Vitamin -B Complex

(i) Formation of Red Blood Cells

Vitamin B is used to form Red-blood Cells - Precisely, Vitamin B-6 is responsible for RBC production

(ii) Breaking Down Glucose

It breaks down glucose into further parts. This helps in the procces of digestion.

(iii) Providing Energy to cells

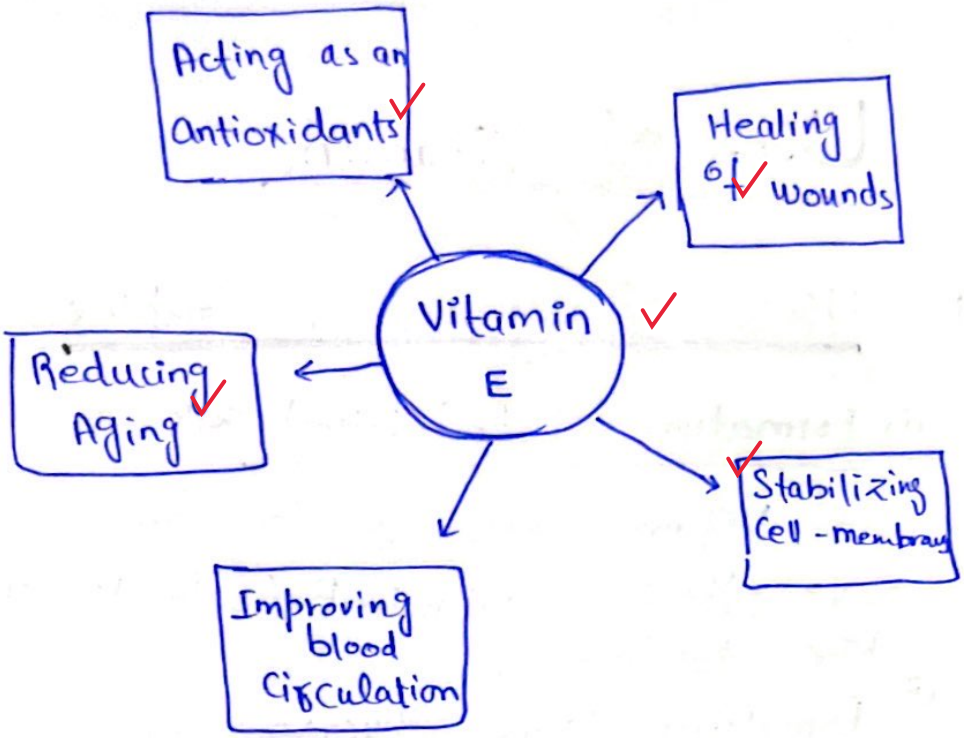
It provides cells with a great amount of energy as a consequence of its reaction with Glucose

(iv) Helping in Brain functions

Vitamin B1 is essential for the proper functioning of nerve cells and tissues.

(v) Creation of Genetic Material: Vitamin B9 is essential for the creation of DNA.

(ii) Uses of Vitamin E



(iii) Uses of Vitamin D

(a) Bone growth: Vitamin D is essential for the growth of bones

(b) Blood Clotting: Vitamin D helps in blood-clotting by expediating it.

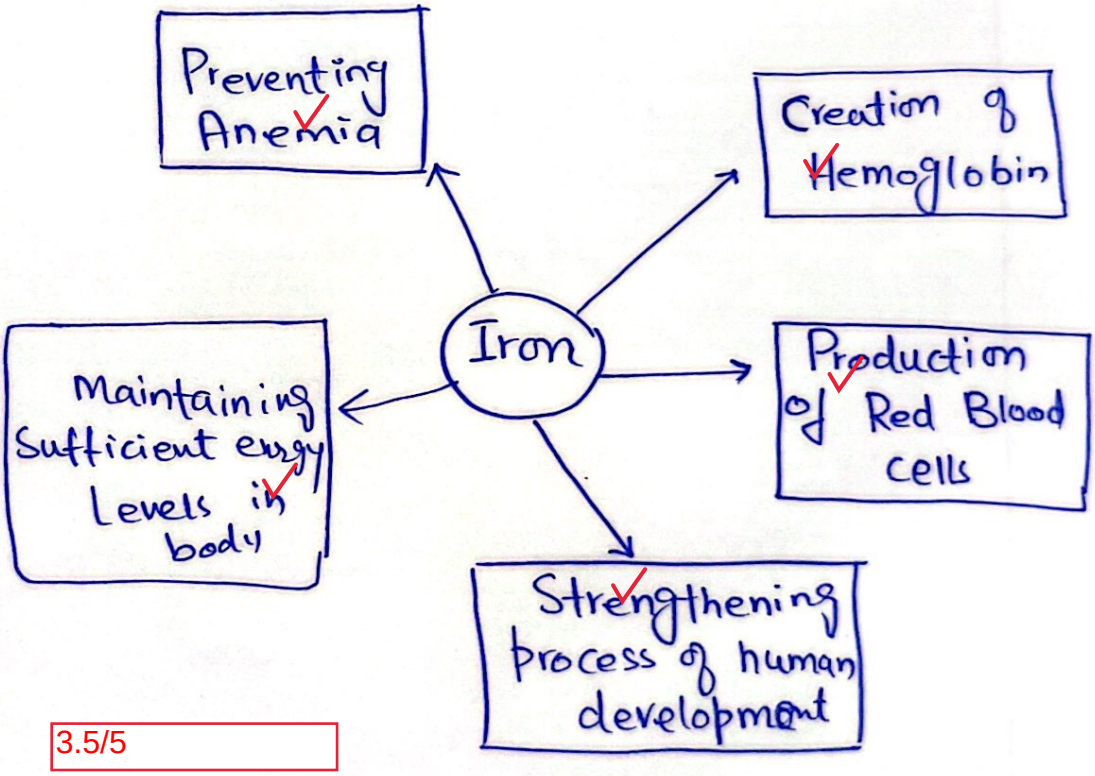
(c) Teeth and Strength: Vitamin D is used for the growth of teeth and nails and gives them strength

[illegible] against bacteria

(iv) **Helping in Calcium absorption**: Vitamin D helps the body absorbs Calcium that can be used for many functions afterwards.

(v) **Strengthening musceles**: Vitamin D is utilised for the sake of strong and toned musceles.

(iv) Uses of Iron:



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