

Q#5

DRM

Disaster risk management was introduced in Pakistan after after 2005 earthquake in Pakistan. It works on provincial and districts levels. The main function of disaster risk management is:

Mitigation

Preparedness

Response

Recovery

Mitigation:

Disaster risk management functions to mitigate the chances of disasters. For example, To take

steps for climate change to avoid floods.

Preparedness:

It prepared itself with tools and technique to response in emergency situations. For example, use of AI to identify the drought-prone areas in India.

Response:

After any disaster including droughts, floods, tsunamis and earthquake, it responds immediately to minimum damage and loss of lives. For example, in 2025 floods in Pakistan, Disaster Risk Management authority evacuated many people from the flood-prone areas.

Recovery:

After disaster, it works to recover the damage and loss.

Weakness

Solutions

- Reactive rather than proactive → Work on proactive methods
- Financial restraints → ensure resources for disaster management
- Lack of coordination → proper coordination levels between federal and local
- Lack of warning systems → Early warning system and Technology integration

Importance of Risk assessment in DRM

Disaster management authority locate the areas which are more prone to

disasters. Risk assessments methods are use for

→ Allocation of resources:

After risk assessments it allocates the resources in disaster risk areas.

⇒ Early evacuations:

Risk assessment is essential for ~~and~~ early evacuations and minimum loss.

⇒ Building infrastructure:

Risk assessment is useful in building infrastructure and identify the areas with more risk of disaster to build resilient - infrastructure.

(6)

Biofuels

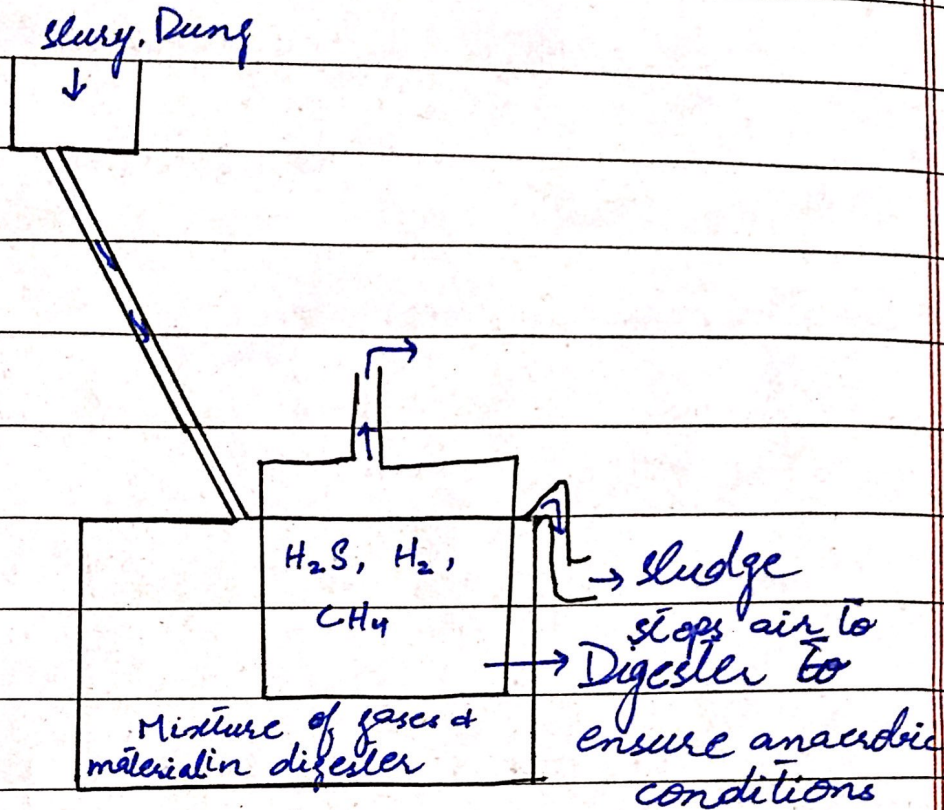
"Biofuels are ^{produced from} organic or inorganic materials including animal waste and plant materials which are used to generate energy resources."

⇒ Biofuels are renewable energy resources which are more sustainable and ensure the less greenhouse gas emissions.

1) Biodiesel:

Biodiesel and petroleum are ^{mainly} produced in European union. It is produced when vegetable oil or animal fat is mixed with alcohol.

Bio gas



Biogas is produced from animal waste and plant materials. Different gases are produced including methane CH_4 , H_2 and H_2S . Gases are produced in anaerobic conditions and sludge came outside from another end.

(C)

Digestive System

Digestive system is the breaking down of larger food molecules into simpler and digestible ones. This system contains oral cavity, oesophagus, stomach, small intestine and large intestine.

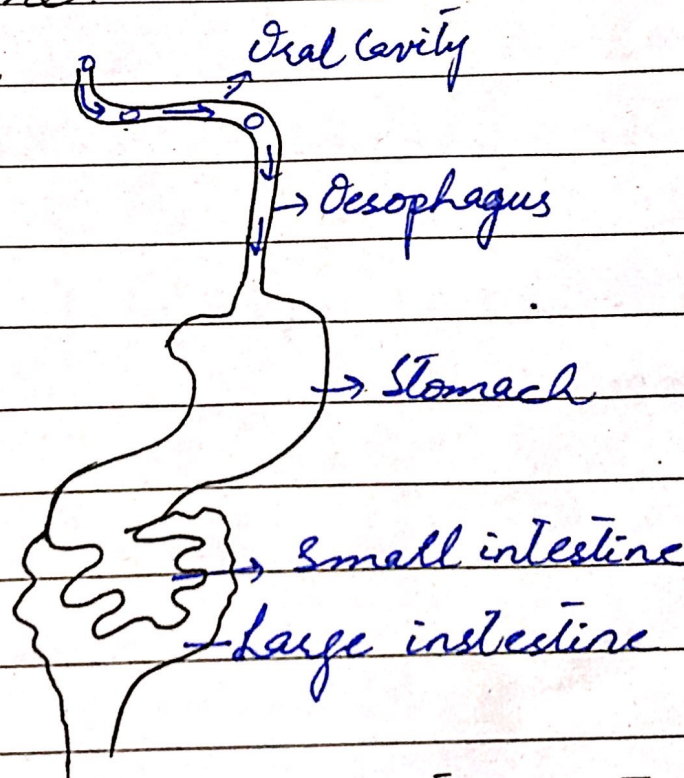


Figure: ~~Small~~ Digestive System

Role of Stomach and Small Intestine

Stomach

10% of digestion takes place in stomach. The end of oesophagus is the start of stomach. Sphincter is a muscular valve which enters the food into stomach and prevents it flowing back to oesophagus. Gastric glands secrete gastric juice including:

Mucous cell: Protects the inner layer of stomach

Parietal cell: Release HCl to kill micro-organisms

Zymogen cell: Secrete pepsinogen, the active form of pepsin

Stomach produces thick material known as chyme which goes

To small intestine for digestion and absorption.

Small Intestine

90% of digestion takes place in small intestine. Villi is the main site of absorption. Small intestine consists of:

- 1) Duodenum
- 2) Jejunum
- 3) Ileum

1) Duodenum:

Liver and pancreas secrete their secretions. Liver secretes bile which helps in the digestion of fats and pancreas secretes

Trypsin: Protein into polypeptides

Lipase: Fats into fatty acids

2) Jejunum:

Intestinal juices release in jejunum. It includes

Trypsin: Converts dipeptides into amino acids

Lipase: Fats into fatty acids

Lactase: Lactose into glucose

~~3) Small I~~

3) Ileum:

Villi is the main absorption site in ileum. Fatty acids, sugars and amino acids are absorbed and goes to the bloodstream through capillaries. Food particles are absorbed which is known as assimilation.

(d)

Plastics

"Materials made up of large organic molecules which are used to produce materials."

Plastics are made up of large carbon atoms joined together known as polymers. For example, polyethylene is made up of 200 000 carbon atoms.

Types of plastics

⇒ Thermoplastics:

When heating, they do not form the chemical bonding and they are easily moldable.
E.g. ethylene, styrene

⇒ ~~Non~~ Thermo-setting plastics:

When heating, they

are hardened and form the chemical bonding. i.e. of dura form.

Properties of plastics:

- ⇒ Thermal insulators
- ⇒ Used when high resistance of heat is needed
- ⇒ Corrosion-resistant
- ⇒ Transparent
- ⇒ Non-metallic
- ⇒ Soft and moldable

Applications of plastics:

- ⇒ Used in industry including aerospace
- ⇒ Military equipments
- ⇒ Manufacturing of furnitures, cars, paints, blankets, pillows
- ⇒ Medical (filling of teeth)
- ⇒ Computer instruments are made up of plastics.

Environmental risks associated with plastics

Water pollution:

When plastics are discarded in water, it causes severe water pollution. It affects the aquatic life.

Health hazards:

Plastics floating on water, leaches to groundwater which is used to drinking purposes. It affects health issues including kidney damage, liver damage, reproductive issues and blue-baby syndrome.

(b) Ceramics

"Metallic inorganic compounds are known as ceramics."

Properties:

- ⇒ Thermal insulators
- ⇒ Electrical insulators
- ⇒ Corrosion-resistant
- ⇒ Oxidation-resistant
- ⇒ Non-magnetic
- ⇒ Extremely strong and hard

Application of Ceramics:

Use in manufacturing materials which are hard and made up of clay.

E.g Tiles, bricks, automobile, watches, utensiles

Use in industry and military equipments

E.g Aerospace industry and weapons.

Use in medical field

E.g bone filling

These are ^{made from} hard material which forms when clay is heated at high temperature.

Q#3

Global Warming

"Heating up of Earth's surface is known as global warming."

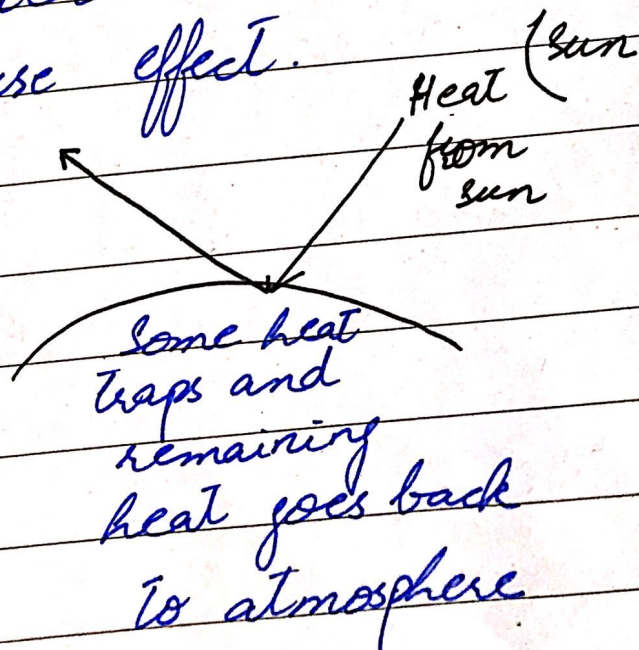
When Earth's Temperature exceeds beyond the limit it

is dangerous for humans and also cause floods (due to melting glaciers) and extreme weather events.

Global warming
can be reversed
in following ways

⇒ Minimize the greenhouse gas emissions:

Heat from sun is trapped in Earth's surface due to greenhouse gases (CH_4 , CO_2 , NO_2) which is known as greenhouse effect.



However, the greenhouse gas emissions are enhanced by human activities due to which large amount of heat traps in Earth's surface.

These gases which includes CO_2 , CH_4 and NO_2 should be minimized in following ways.

⇒ Reduce industrial emissions:

Industries are the main cause of emitting harmful chemicals which enhances the Temperature of Earth.

⇒ Afforestation:

Forests should be reserved e.g. Amazon because they absorb harmful gases like CO_2 . New forests and plants should be ensured to avoid

global ~~green~~ warming

⇒ Reduction in emissions from Transport system:

There should be controlled on emissions from Transport system. Transport system also releases harmful chemicals.

⇒ Use of sustainable and renewable energy resources:

Renewable energy resources ensures the minimum level of greenhouse gases which includes solar energy, wind energy, geothermal and hydropower.

⇒ International agreements on reducing temperature rise:

There should

be international agreements to reduce the temperature increase. For example, in Paris Agreement, it was decided to reduce the temperature increase up to the level of 1.5°C .

(d)

Food Additives:

Substances which are added to the food intentionally during cooking or processing.

For example, Table salt are added to preserve meat.

There are many types of food additives which includes:

- ⇒ Flavouring Agents
- ⇒ Colouring Agents
- ⇒ Thickening Agents
- ⇒ Preservatives

Day. _____
⇒ Stabilizers
⇒ Antioxidants

Food Preservation^{ves}:

"Substances which are which used to preserve the food for a long time are known as food preservative."

These substances inhibit the growth of parasites, micro-organisms and rodents inside the food. For example, Sorbic Acid is used to inhibit the growth of molds. It is used in cheese preservation.

Food Adulteration:

"Intentionally debasing the quality of food by substituting useful material with inferior material"

or removing the useful material from food".

It is used in foods which are for sale. Raw materials, rodents, sugars, water, sand, stones are all used in foods like dal, atta, milk, honey.

For example, water is added in milk and fats are removed to gain economic benefits.

Food Contamination:

"Food is contaminated when it loses its physical and chemical properties."

Food is usually contaminated when it is not stored at time or through inappropriate methods. Parasites, micro-

organisms and harmful chemicals damage the quantity of food. For example, fungus on bread because of growing micro-organisms.

Q#8

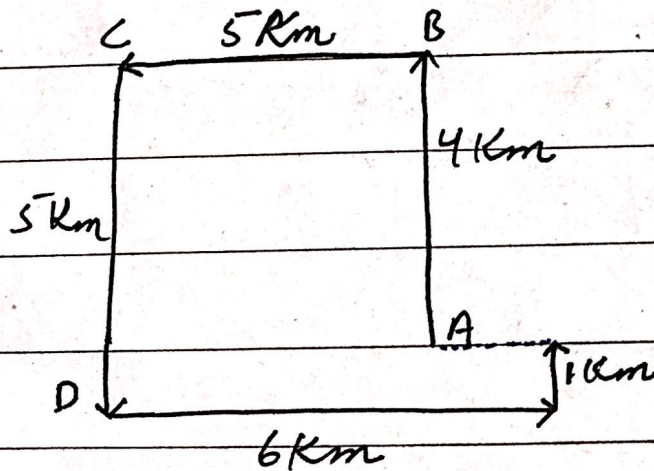
(A)

The sequence of houses is as following

D B (A) E C

So, A is ⁱⁿ the middle of all

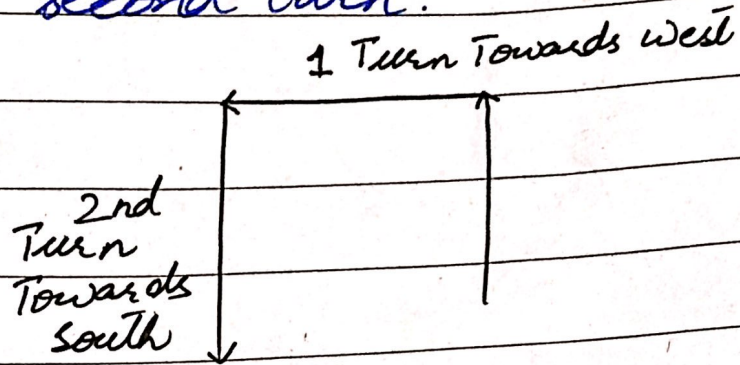
(B)



1 Km away from the starting point.

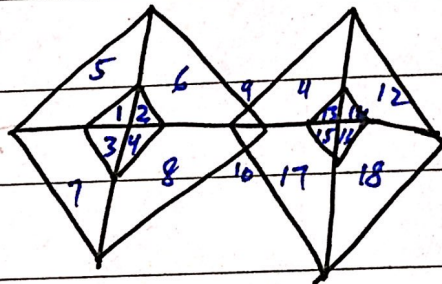
Date: ___/___/20___ Day: ___
In North direction while finishing

In South direction after taking the second turn.



To reach the starting point, we would have to run in west direction.

(D)



Hence, There are 18 Triangles in the figure.

(C)

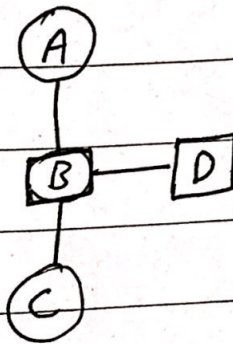
a) Shirt (b) Coat (c) Blouse

(d) Skirt

(e) is odd man out

Q#6

(A)



If C is the grand-daughter of A and is the woman towards whom Ahsan pointed, then D is the brother of B. Hence he is also the son of A. Woman (A) is the mother of Ahsan (D).