

Day: _____

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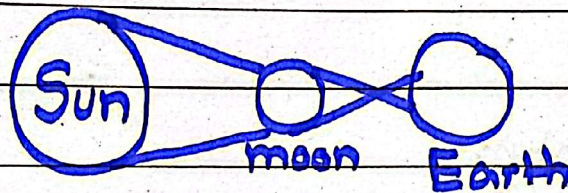
15/40
Q No.1

Part a

1) Solar Eclipse:

Solar Eclipse occurs when the moon comes between the Earth and the Sun.

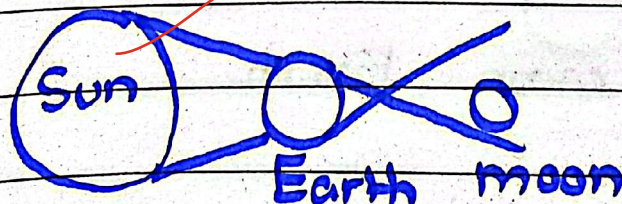
2) Diagram



3) Lunar Eclipse

Lunar Eclipse takes place when the Earth comes in between the Sun and the Moon.

4) Diagram

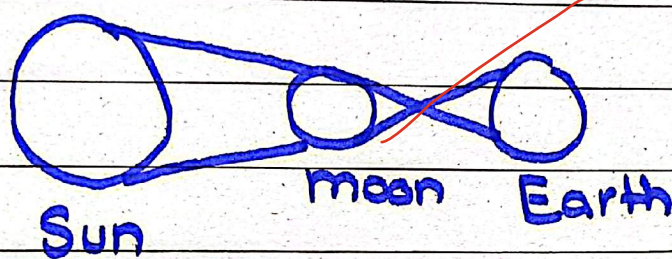


5) Types of Solar Eclipse

a) Umbra

When the moon comes between the Earth and the Sun complete, the Solar Eclipse is called Umbra.

•) Diagram

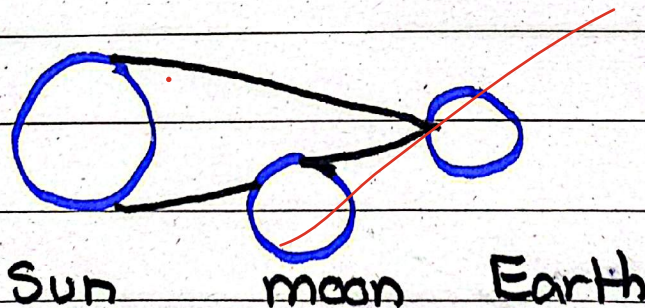


2

b) Penumbra

When the moon partially comes between the Earth and the Sun, the solar eclipse is called penumbra.

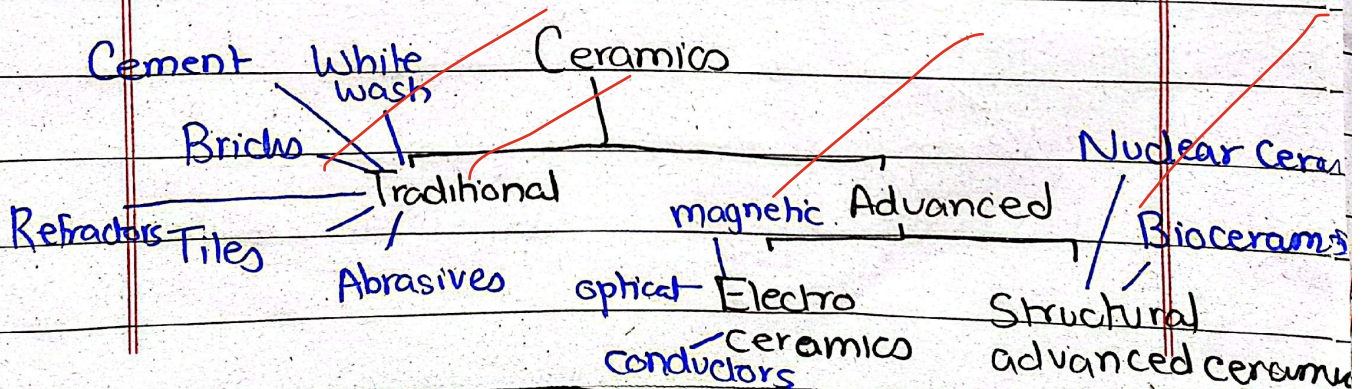
•) Diagram



Part b

	Plastics	Ceramics
Porosity	Minimal porosity	Porous
Malleability	They are malleable	They are not malleable once cooled
Conductivity	Insulators	Good conductors / insulators
Hardening temperature	Hardened when cooled	Hardened under high temperature
Types	Thermoplastics Thermosetting plastics	Traditional Advanced
Brittle strength	No	Yes

TYPES OF CERAMICS



Ceramics are of two types

1) Traditional

2) Advanced

Traditional Ceramics

The ceramics that are highly porous and are constructed by old and traditional methods.

Examples

Bricks

Tiles

Abrasives

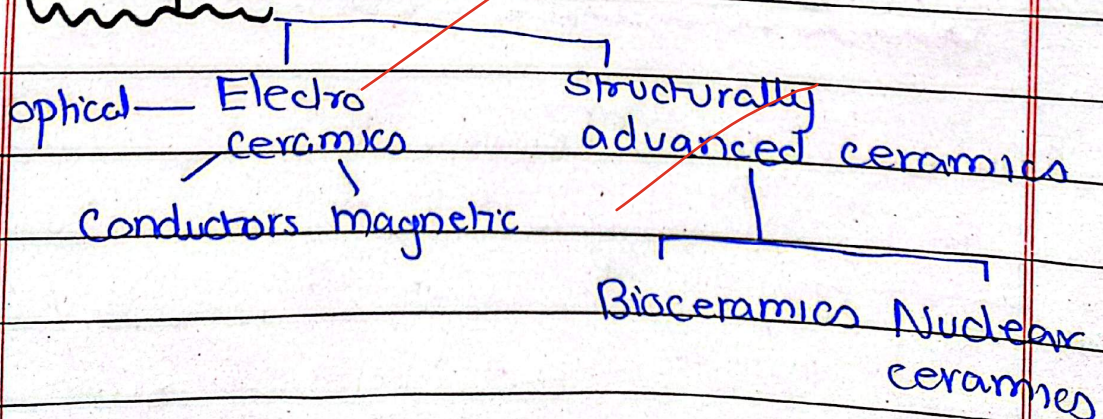
Refractors

White wash.

Advanced Ceramics

The ceramics that are constructed by an advanced skill and technology.

Examples



Applications of Ceramics

1) Used to make kitchen items

Ceramics, such as clay, is used in pottery to make pots, glasses etc

2) Used to make ornaments

It is used to make decoration pieces such as vases and sculptures

3) Used in infrastructure.

It is used in building the walls and roof of the infrastructure

4) White wash houses

It is used to white wash the houses.

5) Ornament of the houses

Tiles are used to decorate the floors of the houses.

4

Part (C)

Difference and the types of Food Contamination and Food Adulteration.

Food Contamination

- The unintentional addition of unwanted substances in the food.
- It is not aimed to get profit.
- It can be permitted if carelessness caused the food contamination.
- Its source is the environment.
- It occurs naturally.

Food Adulteration

- The intentional addition of cheap, inferior and harmful substances in the food.
- It is done to gain profit.
- It is illegal at any cost and is punishable.
- Its source is by the producers, manufacturers, and traders trying to cheat the consumer.
- It occurs due to low morality of men.

Examples

- 1) Bacterial (Salmonella in meat)
- 2) Hepatitis A virus in food.
- 3) Pesticides from the land
- 4) Hair in food
- 5) Fungal growth in pickles.

Examples.

- 1) Water in milk
- 2) Powder used to make ~~yoghurt~~ yogurt.
- 3) Adding stones in grains
- 4) Adding color to spices
- 5) Cheaper oil in ghee.

②

Part d

Un-Balanced diet

When a person consumes macro and micronutrients above or below the daily recommended dose the person is said to have an unbalanced diet.

Consequences of an unbalanced diet.

Consequences

Deficiency

Vitamin A
(Night blindness)

Vitamin C
(Scurvy)

Vitamin D
(Rickets)

Vitamin K
(bleeding disorders)

Macronutrients
(Marasmus
Kwashiorkor)

Excess

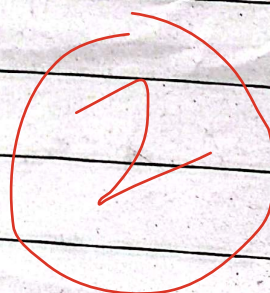
Fatty liver
Fat → Heart Attack
Stroke
atherosclerosis

Calcium → Kidney stones

Carbohydrates
↓
Type 2 Diabetes

Iron
↓
Constipation

Protein
↓
Protein Urea



Q No. 2

Food Preservation methods.

The ~~g~~ methods through which the spoilage of food is slowed down, which is accelerated by the microorganisms in the food, are called food preservation methods.

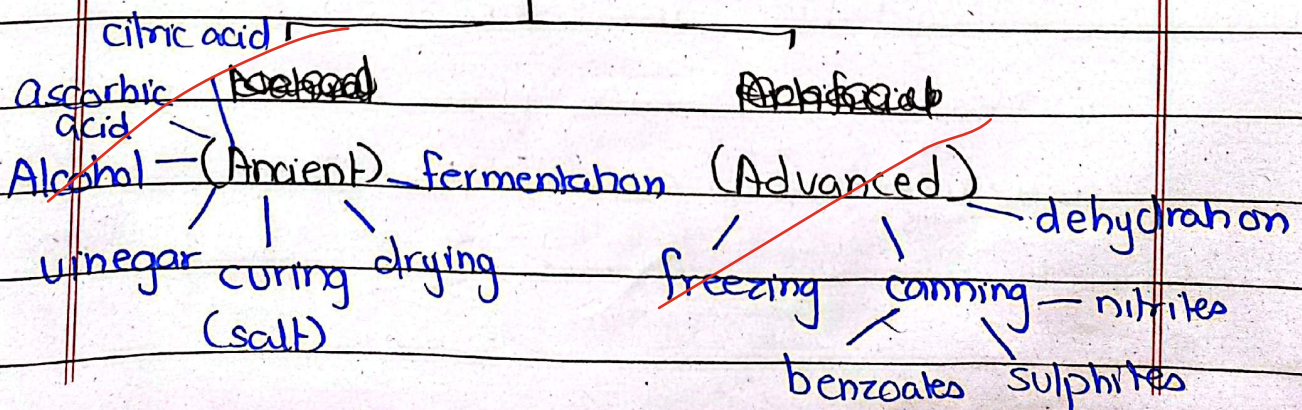
Purpose.

- 1) Improve the appearance of food
- 2) To increase the shelf life of food
- 3) To maintain the natural characteristics of food.

Methods of Food preservation

Food Preservation

Methods



There are two methods of Food preservation in the present world.

1) Traditional / Ancient

Natural materials are utilised to preserve food through traditional method.

a) Curing with Salt.

Salt is used to preserve fish, meat and vegetables.

b) Drying in sunlight or underground.

Meat is dried underground in an aluminium foil while fruits and seeds are dried, along with vegetables, to increase their shelf life.

c) Fermentation

Vegetables are fermented to make pickles by using ~~etchet~~ vinegar for the consumption over a long time.

2) Advanced Methods

Food is artificially preserved by adding synthetic chemicals in the advanced method or by freezing to slow down the microbial activity.

a) Canning of food.

Canned foods have additive chemicals such as benzoates, nitrites and sulphites to increase their shelf life.

b) Freezing of food

Microbes prefer a warm environment to culture. So food is frozen to prevent the bacteria from ~~eat~~ spoiling the food. That is why vegetables, meat, fish, fruits ~~and~~ and chicken is frozen for a longer consumption.

c) Dehydration

Food such as meat, vegetable and fruits are dehydrated to eliminate moisture, that can increase the microbial activity and cause food contamination.

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Advantages

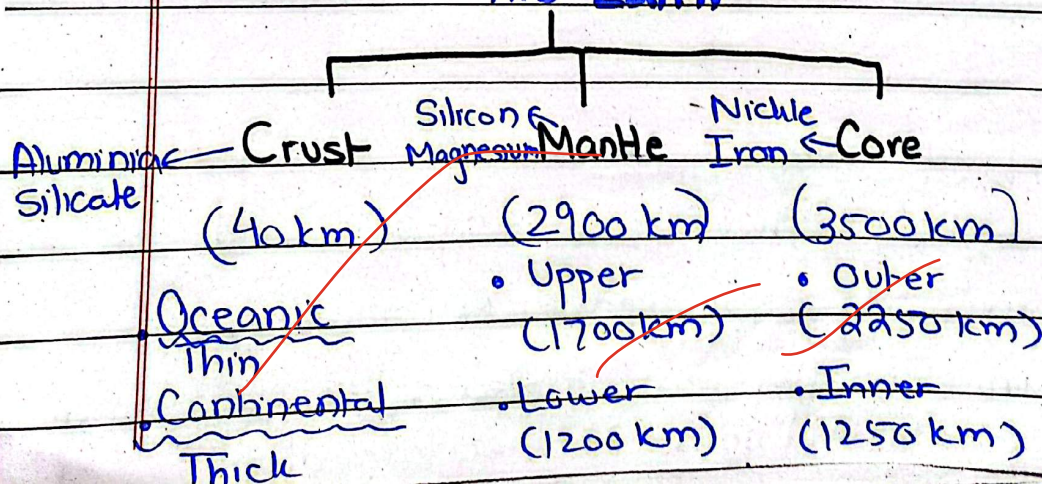
- 1) Longer shelf life.
- 2) More food in the world of growing demand
- 3) Food can be easily exported or imported.
- 4) All weather availability of a wide variety of food.

Disadvantages

- 1) Causes hazards for health
- 2) Increased salt can lead to high blood pressure
- 3) Dehydration can lead to loss of nutrients from food.
- 4) Freshness of the food is compromised.

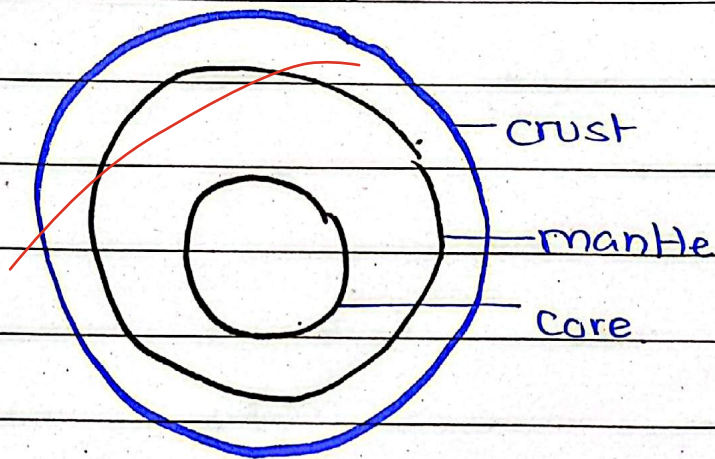
Part b

Explain the internal structure of the Earth



Lithosphere	Asthenosphere	Mesosphere	Centrosphere
(Crust +	(Rest of	(Lower	(Inner
Upper part	the upper	mantle +	Centro-
of upper	mantle)	Outer	sphere)
mantle)		(Centrosphere)	

Diagram



Crust

It is the top most layer. It extends upto 40 kms. Alumina silicate is the most abundant element in this layer. It is divided into Oceanic crust (thin) and Continental crust (thick).

Mantle

It is the middle layer of the Earth. It extends upto 2900 kms.

Magnesium and Silicon are found in abundance in this layer. It comprises of an Upper Mantle which is in liquid form and extends upto 1700 km. Moreover, the lower Crust is in solid form which extends upto 1200 kms.

3) The Core

It is the innermost part and the most hot part of the Earth. The most common elements found in this layer are Nickel and Iron. It ~~comprises of~~ extends upto 3500 km. The Outer ^{Core} ~~Crust~~ has a depth of 2250 km while the Inner Core is extends upto 1250 km deep.

Part (c)

Electromagnetic radiations-

The radiations that are formed by the electric and magnetic waves

that are perpendicular to each other and propagate at the speed of light without requiring any medium are called electromagnetic waves.

TYPES OF EMW's.

1) Gamma Rays			
2) X-rays			
3) U.V rays			
4) Visible light	λ	f	Energy
5) Infrared waves			
6) Microwaves			
7) Radiowaves			

Waves	Wavelength	Frequency	Energy
Gamma	• Shortest	• Highest	• Highest
X-rays	• Shorter than U.V rays and greater than gamma rays	• less than gamma rays more than U.V rays	• Less than gamma rays more than U.V rays
U.V rays	• Shorter than X rays ^{larger} _{shorter} greater than visible	• less than X rays greater than visible	• less than X rays greater than visible

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Visible light	Longer than Shorter than U.V. ^{less} greater than I.R.	less than U.V. greater than I.R.	Less than U.V. greater than I.R.
Infrared	longer than Visible light less than microwave	Less than visible light more than microwave	Less than visible light more than microwave
Microwave	Longer than I.R. less than radio waves	Less than I.R. more than radio waves	Less than I.R. more than radio waves
Radiowaves	Longest	Lowest	Lowest

Applications

3 **Gamma**

Radiotherapy, food sterilisation

X-rays

Medical diagnosis, Security checks

U.V

Cosmetic purposes, attaching braces in dentistry

VisibleOptical instruments,
lighting purposes**Infrared**

Heating therapy,

Microwaveshort area data transmission
Heating food.**Radiowaves**Wireless communication
and broadcasting,
RADAR

Part (d)

Disaster Risk Management

The systemic process of administrative decisions, organisation skills and operational capacity, to implement policies, strategies and coping capacities to reduce the adverse effects of natural and human-induced hazards is called Disaster Risk Management.

Importance

- 1) Readily identifies the potential risk of hazards.
- 2) Helps to minimize the human and infrastructural loss.
- 3) Resources can be efficiently utilised in the ^{areas of} risk of disaster.
- 4) Effective policies are made and implemented to manage disasters.
- 5) Proper training of staff to act during and after the disaster.
- 6) Awareness among the locals to gain resilience during and after disaster.
- 7) There is an improvement in the Early detection mechanisms.

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8) Effectively rehabilitates and
rehabituates the community
and infrastructure.

