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063

Part - II

Section - I

Question # 4

a. What is noise Pollution?
Give its harmful effects
and ways to curb.

Noise Pollution:

The word noise derived from
the Latin word "Nausea" which
means sickness. It is the condition
in which a man feel to vomit.
Noise is the unpleasant and
undesirable sound which leads to
discomfort in human being.

Capacity of human ear

The capacity of sound is measured in decible (dB). Human ear can listen 1dB. The sound more than 1dB become the noise pollution of human being. It have adverse effect on human being.

Effects of Noise Pollution:

Noise Pollution cause harmful effects on human beings. It cause hypertension, cardiovascular diseases, Hearing loss, sleep disorder.

Hypertension:

Sound more than 1dB disturbed the ~~the~~ functions of brain. The neurons can't perform their functions and cause stretchness in the body.

Cardiovascular disease:

High intensity in the sound cause high blood pressure. It directly effects on heart.

Hearing loss:

undesirable sound of trucks, horns,

speaker disturb the working of eardrum.
Eardrum is responsible for listening. Due to
noise, it's danger to lose the hearing.

Sleep disorder:

Noise pollution disorganize the sleep
cycle. Voice more than limited level
directly effects on hypothalamus.

How to curb the effects of noise pollution?

⇒ To conduct training in local
level, that training will help the community
how to drive and what measures taken
during driving.

⇒ By making solid rules, that
gives awareness to the local community

⇒ civil society can play crucial role
to educate the locals through
communication, penalties.

⇒



b. What is the importance of fibers in diet? How would be a platter of food considered balance?

Importance of fibers in diet:

Dietary fiber play significant role in human body. It improves the digestion of food and regulate the metabolism. It play crucial role to maintain body function.

Improve digestion:

Dietary fiber control the function of peristalsis which is responsible of digestion. It prevents the body from constipation.

Regulate the Concentration of glucose:

Fibers in diet controls the insuline and glucose in the blood.

It slow down the absorption of sugar which is responsible to the maintenance of sugar level in the blood.

It manage the weight of body:

Fibers are full of nutrients and minerals which are necessary to maintain the weight of body. It gives the feeling of fullness.

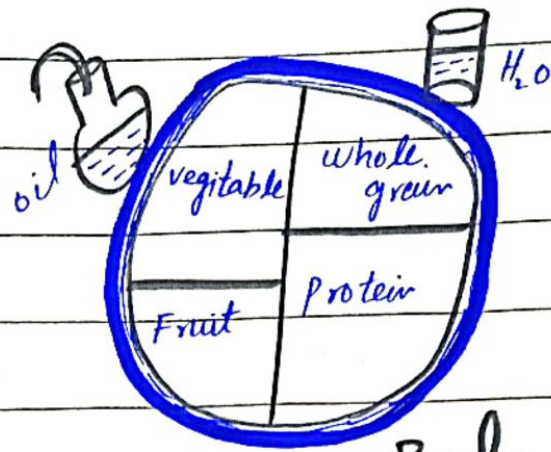
It can improve the health of Heart:

Soluble fiber can help lower cholesterol level in the body. The cholesterol particles are attached with the digestive particles and then it can be removed from body. This may reduce the effects of heart disease.

It have beneficial effect on gut health:

Fiber serve as a prebiotic. It helps to nourish the beneficial bacteria which cause immunity, mental health and inflammation of throat.

Platter of food considered a balanced approach of diet:



∴ Balanced diet Plate

vegetables and Fruits: 50%

It consist of vitamins, minerals, antioxidant, phytochemical which play significant role to maintain the health of body.

Whole grain: 25%

It consist of legumes, nuts, brown bread, quinoa. It gives fullness of eating.

protein 25%

protein play important role in growth of muscle cell. It include eggs, meat, seeds.

So, dietary fiber play important role to maintain the concentration of mineral, vitamins, antioxidant in the body. It keeps the body healthy & wealthy.

c. Elaborate drinking water quality and standards?

What is drinking water quality standards:

It is the amount bacteria, inorganic chemical which are necessary to maintain the quality of water but its higher concentration badly effects the health of human beings and animals.

Who sets the standard of water:

World Health organization set the standard in Geneva, 1993. Every country set their standard according to the WHO.

Pakistan Environmental protection agency, 2008, set the water quality standard. Water is the necessary part of life. so it's necessary to set their standard.

Bacteria Pak WHO standard

E. coli	Must not be present in 1000 ml sample	Must not be present in 1000 ml sample.
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Physical

Color	≤ 15 colouring units	≤ 15 colouring units
Taste	Not objectionable	Not objectionable
odour	" "	" "
Turbidity	5 NTU	5 NTU
PH	6.5-8.5	6.5-8.5

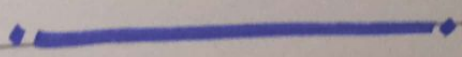
Inorganic chemical mg/litre

Ca	200	200
Na	100	100
Nitrate	400	500

Toxic chemical mg/litre

CN	≤ 0.05	0.07
Pb	≤ 0.05	0.01
Mn	≤ 0.5	0.5

By adopting these standards, quality of water **could be** better and water become drinkable.



d. Explain Lithosphere. What are rocks and minerals. Lithosphere:

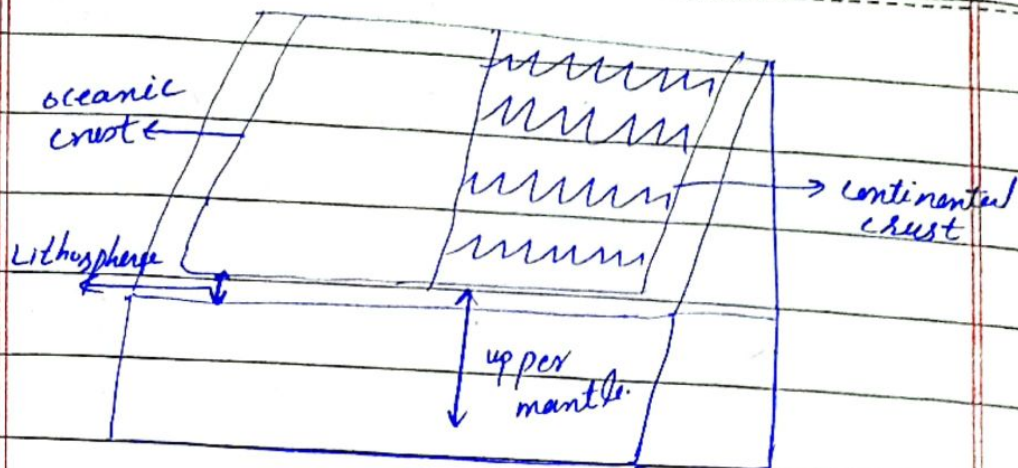
The earth is separated on the basis of its mechanical properties instead of its composition. It is divided into two layers. The topmost layer is called lithosphere, which comprised of crust and solid portion of upper mantle.

Lithosphere is the greek term, Litho means "stone" and sphere means around the surface of earth. So, it is the layers of stones and minerals that surround the earth.

The lithosphere essentially floats atop semi-solid layer called asthenosphere. This layer allow lithosphere to move around since the asthenosphere is weaker than lithosphere. Asthenosphere is 100 km ^{350 km} deep.

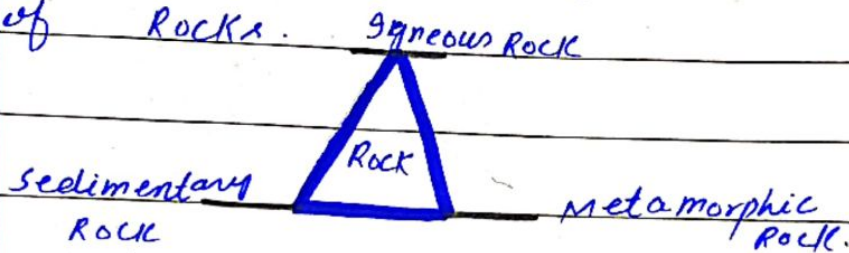
Types:

- 1- oceanic lithosphere
- 2- continental lithosphere.



Rocks:

Rock is coherent, naturally occurring solid material consisting of one or more minerals. It consists of three kinds of rocks.



Minerals

Minerals are the building block of all rocks. More than 4000 minerals are identified. Minerals can be defined as; It is naturally occurring, inorganic solids, crystalline and fixed shape of minerals. There are eight elements that make up most of minerals, oxygen, Silicon, Aluminium, Fe, Na, Ca, Mg, P; they account for about 98% of the earth's crust.

Question # 03

a. What is lunar eclipse? Explain in detail with apt diagram.

Lunar Eclipse:

An Eclipse is occur when heavy moving body come in front of the another heavy body. It become shadow. So,

Lunar eclipse defined as; When moon is ~~orbiting~~ ^{revolving} around the earth and at the same time earth is revolving around the sun then earth come **between the** sun and moon then light fall on the earth instead of moon. and earth become the shadow that fall on the moon - it is called lunar eclipse. It can be seen with naked eye. Lunar eclipse occur when moon is full.

Process of Lunar eclipse

Earth's shadow is conical in shape and it form two types of region; umbra and penumbra.

Umbra region is responsible of complete lunar eclipse and penumbra region cause the partial lunar eclipse.

Three types of Lunar eclipse:

Partial eclipse:

Partial eclipse occur when moon pass the earth's penumbral region.

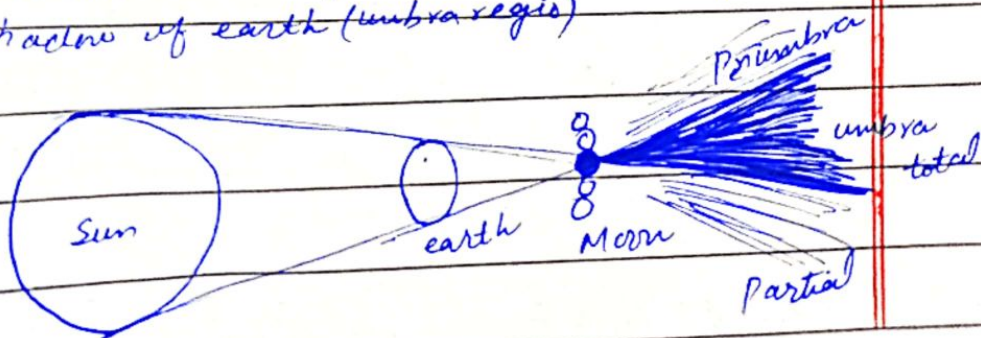
In this phase, moon is slightly change its color.

Penumbral lunar eclipse

When moon pass through the penumbral region of earth and the shadow of earth partially obscured the moon.

Total Lunar eclipse

It occur when complete moon pass through the shadow of earth (umbra region)



b. Explain function of Enzyme in detail with examples:

Enzyme:

Enzyme are organic substances, that is composed of polymer of nucleotides (amino acid). Enzyme ^{could not} act as a catalyst that take part in metabolic chemical reaction but speed up the reaction.

There are number of enzyme which play important role in proper functioning of body such as Urease, Amylase, cellulase. etc.

Function of Enzyme:-

Food industry:

Amylase break down the starch in to sugar to make corn-syrup.

Protease help in manufacturing of biscuit and lowering the protein level.

Trypsin helps in pre-digestion of baby food.

Paper industry

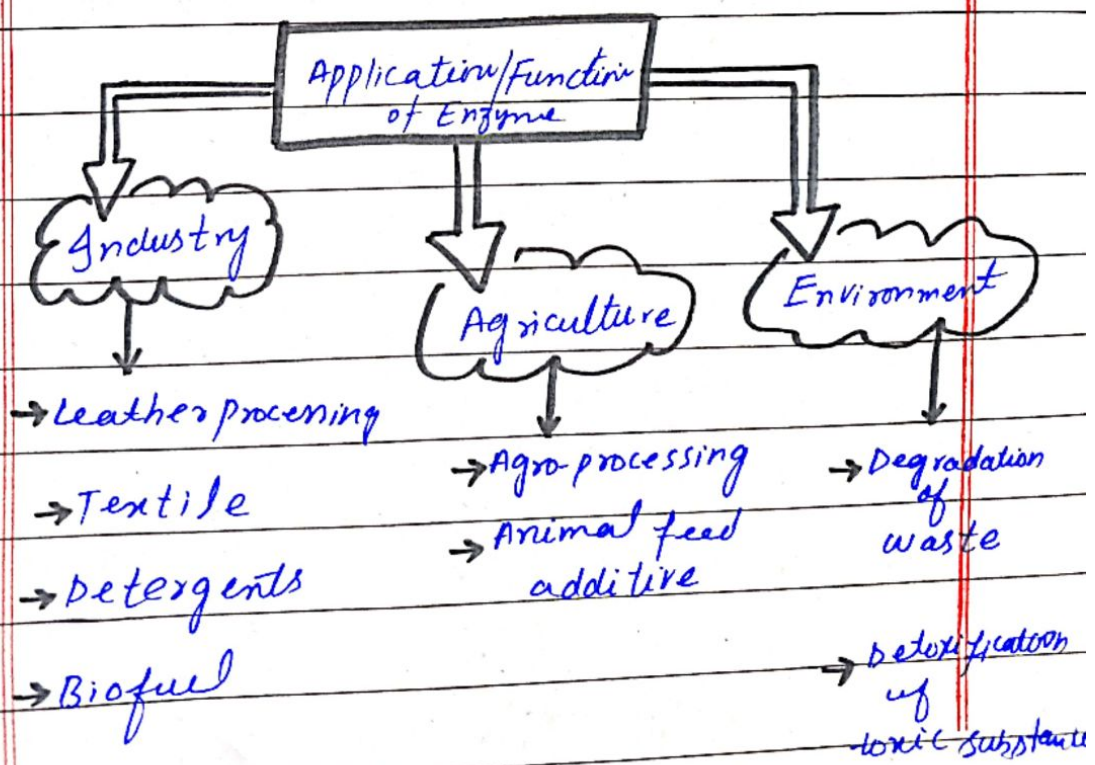
Enzyme like amylases, catalases, cellulase are used in breakdown and lower the viscosity and remove lignin to soften the paper.

Biofuel industry:

Enzyme like cellulases are used in breakdown of cellulose into sugar which can be fermented.

Molecular biology:

Restriction enzyme, DNA Ligase, Polymerases are used in genetic engineering, agriculture, pharmacology, & Polymerised chain Reaction ^{technique} help in forensic science.



d. Earthquake & Volcanic eruption are interrelated? if yes then how.

Earthquake and volcanic eruption are interrelated. They are both caused by the intense heat energy release from the core of earth. That heat and energy is responsible for the movement of tectonic plate that cause earthquake and it's also responsible for the volcanic eruption.

Tectonic plates, magma eruption, seismic activities cause earthquake that further become the reason of volcanic eruption.

Tectonic Plate:

Tectonic plates move due to the heat energy. They slide over each other, collide each other, they create a pressure on fault line. This movement cause earthquake & can create cracks that allow magma to reach the surface of

the earth, resulting in volcanic eruption

Magma eruption:

Volcanic eruption occur when pressure build up below the Earth's surface. Earthquake exert the pressure and allowing magma to rise and erupt.

Seismic activity

Volcanic regions are known for frequent seismic activity. Earthquake occur at this place most of the time. The high intensity and lower intensity cause magma eruption.

For instance, Ring of fire is the place of pacific ocean that shows interrelation b/w Earthquake and volcanic eruption.

C. Explain EMR and what is EMR Spectrum.

Electromagnetic radiation

Electromagnetic radiation are transverse wave in which electric and magnetic

field is produced in the direction of propagation of wave. Depending upon frequency oscillation, different wavelength of electromagnetic radiation γ -rays to radio waves are produced.

Properties

Electromagnetic radiation can be defined its amplitude, frequency, wavelength.

EMS:-

Electromagnetic spectrum can be defined the frequency and wavelength of electromagnetic radiation. Wavelength of one kind of radiation increase the frequency of that radiation decrease it is caused to make the electromagnetic spectrum. It form radio wave, microwave, GR, ~~to~~ Visible light, UV radiation, X-rays, γ -rays.