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PART-II Section - I

QUESTION NO: 3
Part (d)

Are earthquakes and volcanic eruption interconnected? if yes, then how?

Earthquake:

Earthquake occurs at the Earth's crust, due to the movement of tectonic plates. When two or more tectonic plates interact with each other in such a way that it shakes the Earth's crust at that particular area or region, then earthquake occurs.

Volcanic eruption:

Volcanic eruption is the bursting of magma from the Earth's crust. The magma comes out of the Earth known as Dome and then it cooled down into lava.

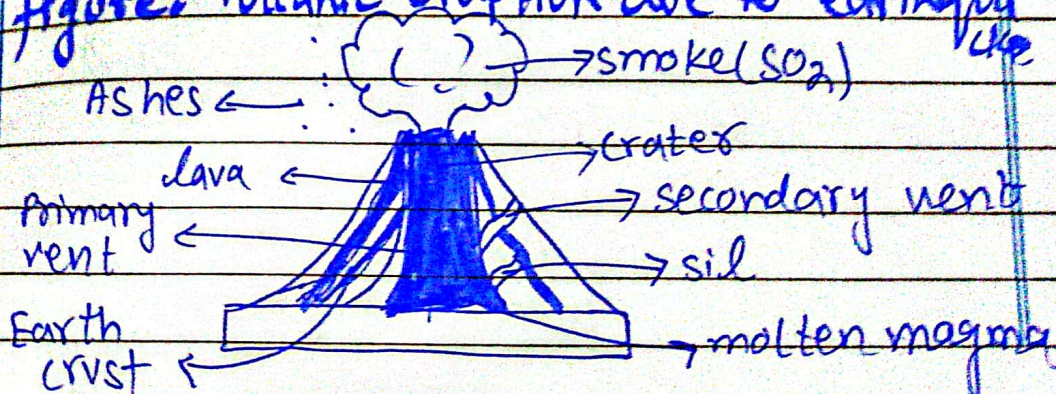
Interconnection of Earthquakes and Volcanic eruption:

Earthquakes are mostly caused by the movement of tectonic plates and their interaction. The shake in the earth's crust produced by the earthquake triggers the molten magma at the earth's crust.

Cracking of Soil and Earth Surface:

Earthquakes have different disadvantages, one of which is cracking of Earth's surface. The cracking of Earth surface by earthquakes opens up the earth layer that provides the path for magma to come out of the earth's crust and hence the magma erupts into explosive explosion.

Figure: Volcanic eruption due to earthquake



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Question No 12

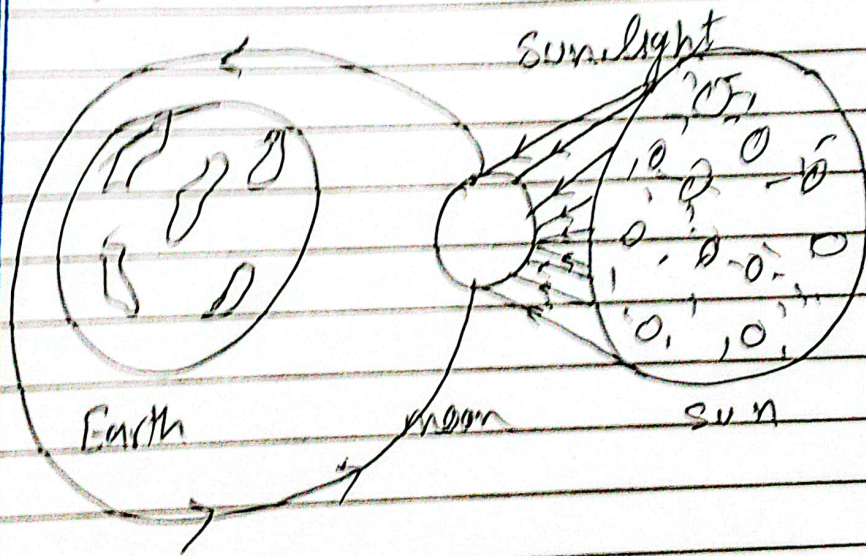
(part 12)

What is lunar eclipse? Explain in detail with apt diagrams.

LUNAR ECLIPSE:

Lunar eclipse is the position in which the moon comes between the earth and the sun creating a lunar eclipse.

figure



Throughout the year the moon revolves around the Earth normally and upon its own axis. But sometime it comes exact between the sun and the Earth causing the hindrance

of sunlight reaching the Earth. Their and various effects of lunar eclipses, including: eye redness, cornea damage, eye irritation etc.

Therefore it is oftenly prescribed to wear sunglasses to protect eyes from lunar eclipses, when it occurs.

Question No 3
part (c)

Give a brief account of Electromagnetic radiations. What is EMR spectrum?

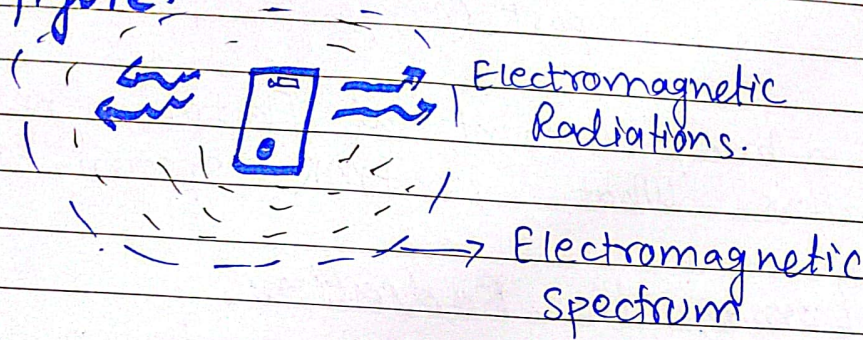
Electromagnetic Radiation:

Electromagnetic radiations are the combination of both the electrical and magnetic waves. These are the radiations generated by high frequency devices including mobile phones, laptops and new technology and advanced phones i.e: T-phone B etc.

EMR spectrum:

EMR spectrum is the Electro magnetic Radiation spectrum. It is the area or spectrum the electromagnetic waves reaches. Different devices have different type of wave production and hence the wavelength (λ (lambda)) varies from device to device resulting in the varification in Electromagnetic Radiation spectrum and production.

Figure:



Question NO: 4
Part (c)

Elaborate drinking water quality and standards.

QUALITY OF DRINKING WATER:

- 1- Dissolved Oxygen:
- 2- TSS
- 3- Solid and Suspended particles
- 4- PH level:

Above are the factors that effects the quality of drinking water.

Dissolved Oxygen:

Although, oxygen is essential for drinking water but its deficiency and excessiveness in water effected the quality of water.

The standard amount of oxygen dissolved in drinking water is above 4mg/L of DO. If the amount of DO decreases and reaches below 4mg/L it is hazardous to human health.

TSS:

TSS is another tool and method to estimate the quality of drinking water. If the TSS is near 20mg/L - TSS then the water is drinkable.

Suspended particles and solid.

It demonstrates the clarity and cleanliness of water. The clear and clean water has less suspended particles. The solid particles are sometimes got mixed in water through: Rocks, soil, mud etc.

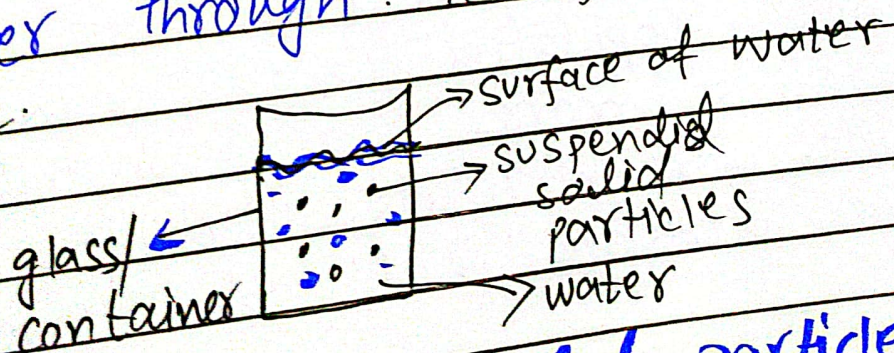


Figure: Suspended particles of solid

PH level:

PH level of water highly affects the quality of drinking water. A standard for water to be drinkable is with the PH of 6.5 - 8.5 pH. If the pH goes below 6.5 or above 8.5 pH then water becomes acidic and basic which decreases the quality of water, hence making it undrinkable.

Standard:

$$6.5 < \text{pH} < 8.5$$

Question No: 4
part (a)

Noise pollution:

Noise pollution is a type of pollution caused by high frequency and pitch of noise. It is often high in most populated areas, where there is more traffic and Halls for birthdays, weddings or other occasions that attract masses.

Harmful effects of Noise Pollution:

There are many harmful effects of noise pollution that includes following.

Hearing loss

Frustration

Psychological issues

Head ach

Stress

Mental pressure

Disturbs the birds life.

Damages the Human health:

The high frequency of noise from noise pollution could cause the damage to ear drum and curtain resulting in hearing loss.

Psychological issues:

Continuous presence of a human being in noise polluted area cause fatigue and frustration and often stops the normal thinking process of brain. causing mental pressure which may lead to rupturing of veins in brain.

Disrupts the birds life:

Birds and animals are much sensitive to sound. Being in a noise polluted area the birds that are essential part of nature get frightened and migrate to a better place with minimum to no noise pollution.

WAYS TO CURB:

- ⇒ Use of public transport instead of private, to decrease the number of vehicles on roads.
- ⇒ Horns and loud noise transport (trucks and buses) should be minimized.
- ⇒ Awareness among the pupil should be spread about the noise pollution.
- ⇒ Large speakers should be avoided.

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Section - II

Question # 6

(a)

$$k = ?$$

arithmetic mean of
9, 8, 10, k, 12 is 5

Arithmetic

$$\text{mean} \rightarrow \frac{9+8+10+k+12}{5} = 5$$

$$39+k = 75$$

$$k = 75 - 39$$

$$\boxed{k = 36} \text{ Answer.}$$

Part (b)

$$(4:3) + 10 = 4:5$$

Ratio of

$$\frac{4}{3} = \text{Sugar + color water mixture}$$

10 liters of colored water added

$$1 = \frac{4}{3}$$

$$10 \text{ liters} = \frac{4}{5}$$

$$\text{sugar solution} = \frac{4}{5} \times 10$$

$$\boxed{= 8 \text{ liters}}$$

part (d)

Volume of football = ?

$$\text{Radius} = 12 \text{ cm}$$

$$\text{diameter} = L = 24 \text{ cm}$$

$$\text{Volume} = L^3 = 24^3$$

$$V = 13584 \text{ cm}^3$$

Part (d)

$$-10, -8, 6, 40, 102, ?$$

$$+14 + 34 + 64 + 94$$

$$\text{so } ? = 102 + 94$$

$$= 196.$$

solution:

$$-10, -8, 6, 40, 102, 196$$

Q # 7

$$20x = y$$

$$\frac{20}{100} = \frac{y}{100}$$

$$\frac{20x}{100} = \frac{y}{100}$$

$$\frac{20(100)x}{100} = \frac{y}{100}$$

$$\text{Answer } \frac{y \cdot x}{20} = x$$

$$y \cdot x = 20x$$

Part (b)

$$P \text{ of } Q = 5050 \quad \dots (i)$$

$$\frac{P+Q}{2} = 5050$$

$$Q + R = 6250 \quad \dots (ii)$$

~~2525~~

$$\frac{P+R}{2} = 5200 \quad \dots (iii)$$

$$P = ?$$

$$P = 10400 - R$$

$$R = 6250 \times 2 - Q$$

$$R = 12500 - Q$$

$$Q = 10110 - P$$

~~$$Q = 6250 \times 2 - R$$~~

$$Q = 10110 - (10400 - P)$$

$$= 10110 - (10400 - (12500 - Q))$$

$$Q = 10110 - (10400 - (10400 - P))$$

$$Q = 10110 - (10400 - 10400 + P)$$

$$Q = 10010 - P$$

$$P = 10010 - Q$$

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Part (d)

$$D = 4xJ$$

$$D + 14 = 2xJ$$

$$2D + 14 = 6J$$

$$2(D + 7) = 6J$$

$$D + 7 = 3J$$

$$D + 3J = 7 \text{ years.}$$