

SECTION 'B'

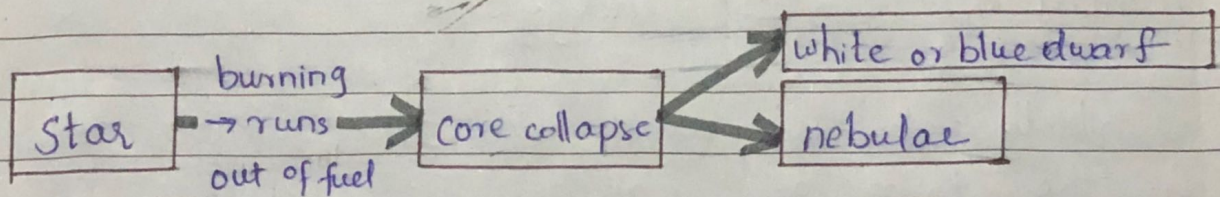
Q2:

a: Differentiate between a star and a planet.
Briefly describe the life cycle of a star from nebula to a blackhole.

STAR: A star is a celestial body that emits light through process of fission or fusion. For instance, the sun. The sun is the star of solar system. It emits light by the process of fusion.

PLANET: A planet is a celestial body in space that has an orbit to around it. According to the criteria of IAU, planet must have an orbit, has an orbit clear from debris and must be uniform in shape i.e. spherical.

LIFE CYCLE OF A STAR:



When a star burns its core to the maximum and when it runs out of fuel, its core collapse. This event turns the star into ~~white or~~ either white or blue ~~dwarf~~ dwarf, or into a nebulae. For instance, after ~~3-4~~ 5 billion years, the sun will collapse and likely to become a white dwarf. Nebulae are observed in far galaxies such as, cat eye nebulae and horse head nebulae etc.

(b) What are semi-conductors? Explain the difference between n-type and p-type semiconductors and list two of their modern applications.

SEMICONDUCTORS:

Semiconductors ~~are~~ ^{are} the instruments that are used to conduct the flow of electricity. The word semiconductor can be defined as a medium which can be used as a conductor and as an insulator.

The modern applications of semiconductors are: ~~comp~~ computers (particularly AI) and solar panels.

Semiconductors are used in electrical vehicles that operate on artificial intelligence to control the flow of energy.

Similarly, it is used in solar panels. ~~to~~ in the form of panels.

(c) Define global warming. Explain the mechanism of the Greenhouse Effect and list three major greenhouse gases.

GLOBAL WARMING:

Global warming is the phenomenon

on heating of the earth's temperature. Due to this, an increase in the regular temperature of the earth is observed.

MECHANISM OF GREENHOUSE EFFECT:

Greenhouse is an artificial house to ~~mainten~~ maintain the inner environment that helps to yield the maximum benefits in terms of crop yield or conducting any experiment. For instance, a temperature is maintained by trapping the sunlight inside so that the crops grow effectively. This trapped energy destabilize the temperature of earth's surface causing planet ~~to~~ warming. Additionally, in this phenomenon certain harmful gases are generated that further pollute the environment.

GREENHOUSE GASES:

- Carbondioxide (CO_2)
- Methane (CH_4)
- Nitrogenoxide (NO).

(d) What is Tsunami? Explain the natural process that trigger a tsunami and the potential impact on coastal areas.

TSUNAMI:

Tsunami is a Japanese word which means "wall of water". It is a natural

disasterous phenomenon in which the water of the ocean or sea gets gets sudden displacement that result into extremely high tides. These tides sometimes reflects the as the wall of water that is why it is called "tsunami" in Japanese.

NATURAL PROCESS THAT TRIGGERS TSUNAMI.

There are two primary causes that triggers tsunami. One is earthquake, the sudden shaking of earth's surface and movement of tectonic plates under the ocean disrupt the serenity of waves, causing tsunami. Second is volcano activity, it disrupts the movement of tectonic plates that could also trigger the tsunami.

IMPACT ON COSTAL AREAS:

Tsunami poses a great impact on the costal areas. It disrupts power transmission lines, destroy houses, plantation and infrastructure. Tsunami can be more disruptive if the costal area is populated. Due to which, warning system and evacuation operations become neccessary to avoid the life losses that tsunami may cause.

Q4:

- (a) Explain the rock cycle. Differentiate between igneous, sedimentary and metamorphic rocks with examples.

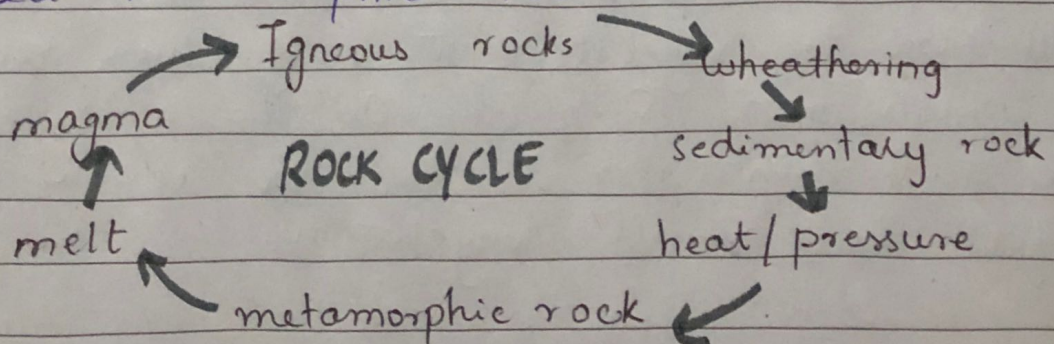
ROCK CYCLE:

A rock cycle is a process through which rock is formed and turned into a valuable and useful material. There are mainly three types of rocks: igneous, sedimentary and metamorphic.

IGNEOUS: The rocks that are formed ~~throug~~ by the volcanic activity is called igneous rocks. For example, ~~coal~~ magmatic rocks.

SEDIMENTARY ROCKS: The rocks that are formed by mud, clay or organic material are sedimentary rocks. For example, coal, limestone etc.

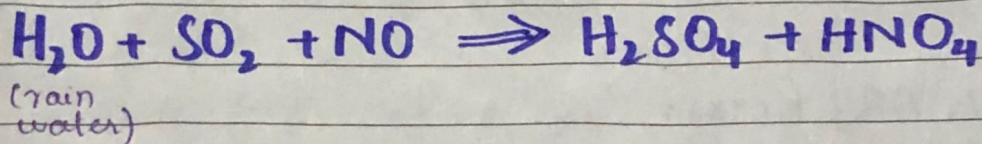
METAMORPHIC ROCKS: The organic rocks when undergo a process such as burning, it turns into metamorphic rocks. For example, when coal is burned it turns into diamond and jade. Such rocks are called metamorphic rocks.



(b) What is acid rain? Discuss the chemical reaction involved in its formation and its harmful effects on aquatic life and vegetation?

ACID RAIN:

Acid rain occurs when the acidic pollutants that are present in the environment combine with the rain water. It usually occurs in the first rain of the season because it contains all the pollutants of the environment that was present from a period of time.



EFFECT ON AQUATIC LIFE: When the acidic water of rain water enters into the river, ocean or pond, it disrupts the pH level of the water. This also affects the oxygen levels and microbiomes of the water which are necessary for the survival of aquatic animals or aquatic.

EFFECT OF VEGETATION: The acid rain when falls upon the vegetation it may cause decay of plants and its yield. On the other hand the acid rain disrupts the soil which affects the overall vegetation.

(c) Discuss the role of remote sensing and GPS (Global Positioning System) in environmental monitoring and disaster management.

REMOTE SENSING

collects data about the earth's surface

GPS

collects, captures, store, analyze data

ENVIRONMENTAL MONITORING:

Remote sensing collects the data of the earth's surface that is used to anticipate the environmental conditions. Whereas, GPS collects the data, analyze and store data of the earth's geographical position. It is more useful in monitoring the earth's environment.

DISASTER MANAGEMENT:

Remote sensing collects and provides the data of the disastrous condition that can be further used for analysis and policy-making. Global Positioning Information system collects the data of disaster affected area, analyze it and also provide the data of potential possibilities of disaster in the nearby affected or risk areas.

(d) Explain the concept of Solid Waste Management. What are the environmental hazards associated with improper disposal

of urban waste ?

SOLID WASTE MANAGEMENT :

A phenomenon of systematic disposal of solid waste is called solid waste management. The disposal of different kinds of waste by different methodologies such as, plastic, metal and paper through process of reduce, recycle and reuse.

ENVIRONMENTAL HAZARDS BY IMPROPER DISPOSAL OF URBAN WASTE :

- ① Land hazards : The land in the urban areas is so confined that dumping of waste on land will not just affect the land but also pollute the nearby areas of residence.
- ② Water pollution hazards : The solid waste may penetrate the earth's soil and it may lead to pollution of underground water reserves. Since, the urban areas are largely dependant upon the underground water supply, this may pollute the water.
- ③ Health hazards : Since the urban areas are so confined, therefore improper waste management would not just pollute the air but, also cause health issues. For instance, malaria, dengue, viral infections and skin disease.

Q7:

~~100~~

(C) 65 (45)

(40) 14

(60)

~~20K~~

80

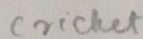
C 65

40 H
40
25

$$100 - 20 = 80$$

the difference is $= 40 - 15 = 25$.

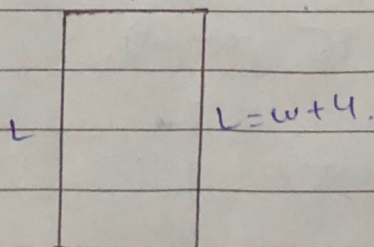
watch both



Hockey

we?

(b)



volume = ?

depth = 2.5 m.

$P = 72 \text{ m.}$

$$\text{Perimeter} = 2l + 2w$$

$$72 = 2(w+4) + 2w$$

$$72 = 2w + 8 + 2w$$

$$72 = 4w + 8$$

$$72 - 8 = 4w$$

$$4w = 64$$

$$w = \frac{64}{4} = 16$$

$$\boxed{w = 16\text{m}}$$

finding length.

$$\text{Perimeter} = 2l + 2w$$

$$72 = 2l + 2(16)$$

$$72 = 2l + 32$$

$$72 - 32 = 2l$$

$$\rightarrow \frac{40}{2}$$

$$\boxed{l = 20\text{m}}$$

$$\text{Volume} = l \times w \times h$$

$$= 20 \times 16 \times 2.5$$

$$= 7.0\text{m}$$

$$\boxed{\text{Volume} = 7\text{m}}$$

$$\begin{array}{r} 20 \\ \times 16 \\ \hline 120 \\ 200 \times \\ \hline 320 \\ \times 2.5 \\ \hline 1600 \\ 6400 \times \end{array}$$

(d)

ages of father + son = 75 (present).

no. years = -10

→ father's age = 4 (son).

father's age - 10 (years) = 4 (son) - 10 (years).

$$f - 10 = 4s - 10$$

Q8

(a)

ROAD
= UQDG

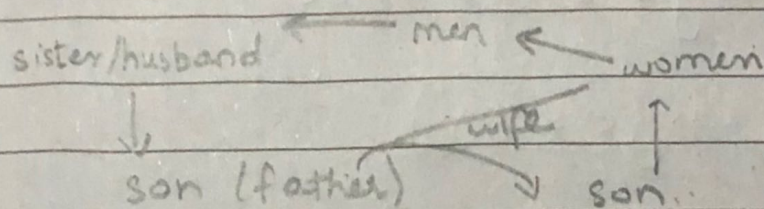
R O A D
↓ ↓ ↓ ↓
U Q D G

LAKE ?

L A K E
↓ ↓ ↓ ↓
O C N H

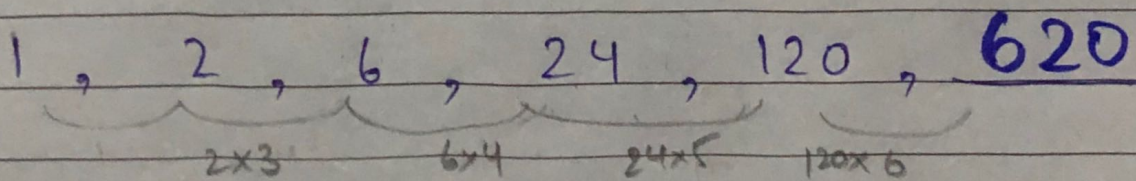
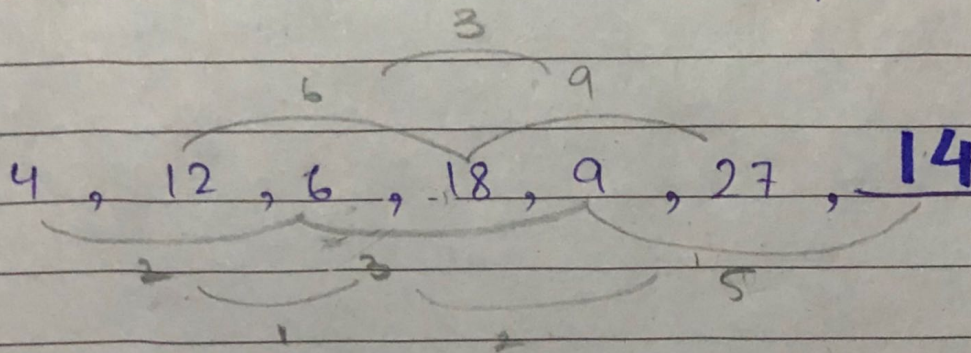
LAKE can be written as, "OCHN"

(b)

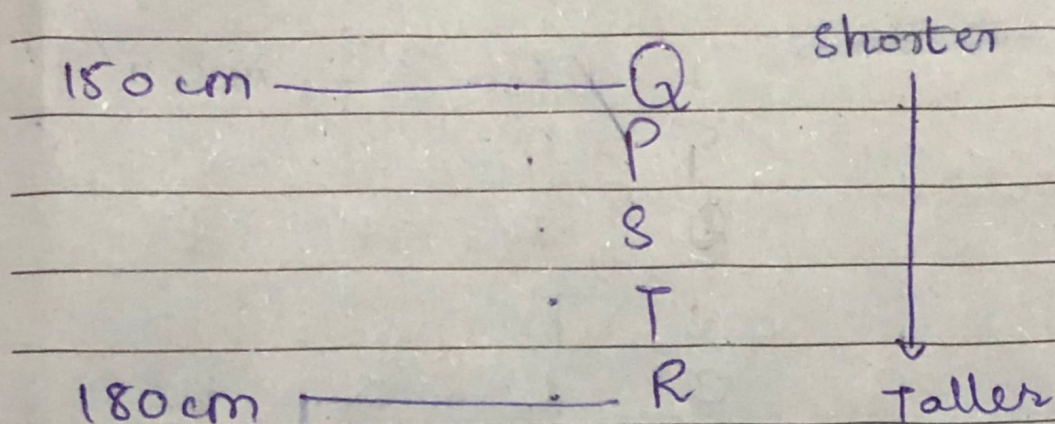


The man is uncle-in-law of that women

(c)



(d) According to data,



$$\text{range} = \text{max} - \text{min}$$

$$\text{range} = 150 - 180$$

$$\boxed{\text{range} = 30}$$