

Question: 04

(a) Distinguish

(i) Cyclone :

Cyclone is a result of warm air of oceans, causing a chaos in water bodies.

(ii) Tornado :

Tornado is a result of a thunderstorm with low pressure inside, causing clouds to the land.

(iii) Hypocenter :

Hypocenter is a point inside earth, where earthquake originates.

(iv) Epicenter :

Epicenter is a place exactly above the hypocenter on earth during a earthquake.

(v) GPS :

The Global Positioning System is a satellite based navigation system that using trilateration principle to show location, position and distance on earth.

(vi) GIS :

Geographic Information system is a computer based system that attain, store, analyze, visualize, and interpret data by using control unit, user and space unit.

(vii) RAM :

The Random Access memory is a primary type of computer memory that is non-volatile.

(viii) Rom :

The Read only Memory is a type of computer memory that is volatile and not moving.

(ix) Pesticides :

Pesticides are the chemical substances that are being used to kill pest, rodents, and other organisms.

(x) Insecticides :

Insecticides are chemicals being used to kill insects to increase yield of products and reduce risk of diseases.

4

(b)

Volcano Eruptions:

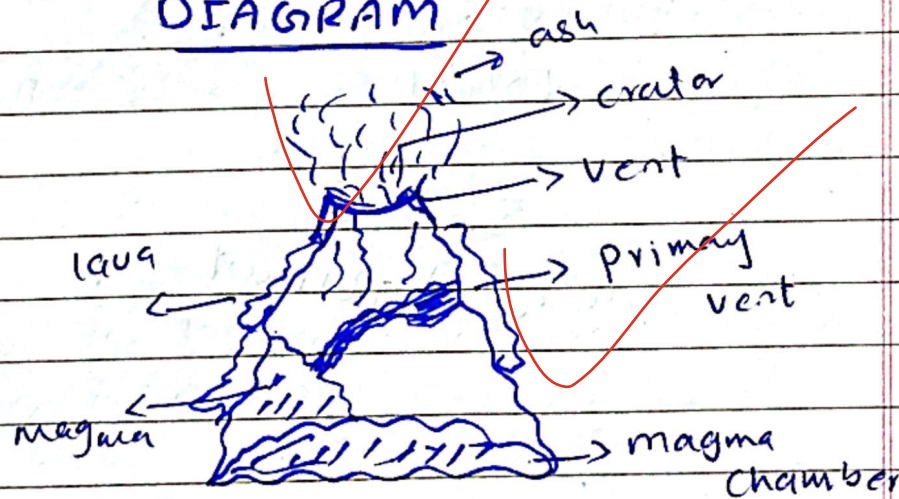
Volcano is a cone shaped mountain like area having ability to explode due to lava or magma.

(a) How volcano erupted:

(i) Magma Formation:

Deep inside the earth element decay and trapped heat caused temperature to increase, causing the rocks to melt and forming magma inside the chamber.

DIAGRAM



(ii) High Pressure and Heat:

melting rock, high pressure, and heat glow push the magma to move up toward the crust through cracks.

(iii) magma exploded near crust:

movement of magma up toward crust making crust unstable

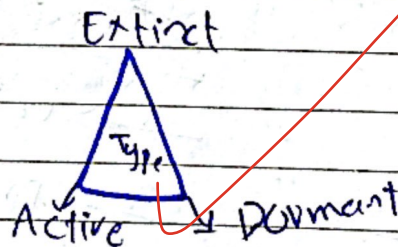
(iv) Volcanic Eruption:

Finally, magma heat erupted and ash, dust, rocks, and smoke come out of vents and crater is formed.

(v) lava formation:

After cooling down on earth lava is formed.

(vi) Types of volcano:



(4)

x ————— x

(C)

Pyrolysis, incineration,
compositing

(a) Pyrolysis :

It is a process of waste management in which :

(i) Heat is being used:

Heat with moderate frequency use to burn the waste.

(ii) In the absence of oxygen:

No oxygen uses in pyrolysis to burn the waste.

(b) Incineration :

A process of waste disposal through heating the waste.

(i) A closed container of iron:

A closed container is being used to burn the waste into ashes.

(ii) Temperature :

A very high temperature is required in incineration.

(iii) Presence of oxygen :

Heating the waste in the presence of oxygen.

• Benefits:

- Ash is being used as fertilizer
- Heat is used to get energy

(i) Compositing:

It is a biological method to dispose of waste.

(i) microorganisms:

In this process living organisms use to degrade the waste.

(ii) Biological waste:

It is feasible to degrade the biological waste.

(4)

• Benefits:

No Pollution

Inexpensive



easily

available

quick

to work

(d) Balance Diet

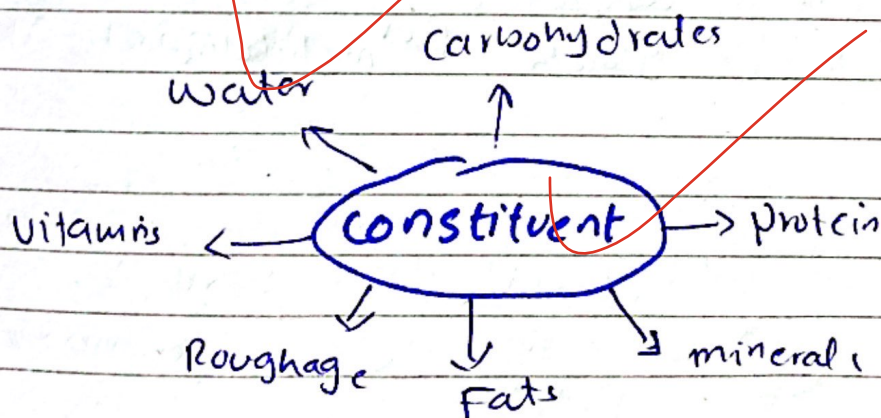
Definition:

Balance diet refers to the diet that contains the essential nutrients in right quantity and proportion, that help body to grow and function properly.

Concept:

"Balanced diet is a right diet to balance the metabolic activities in a body."

Constituents of balanced diet:

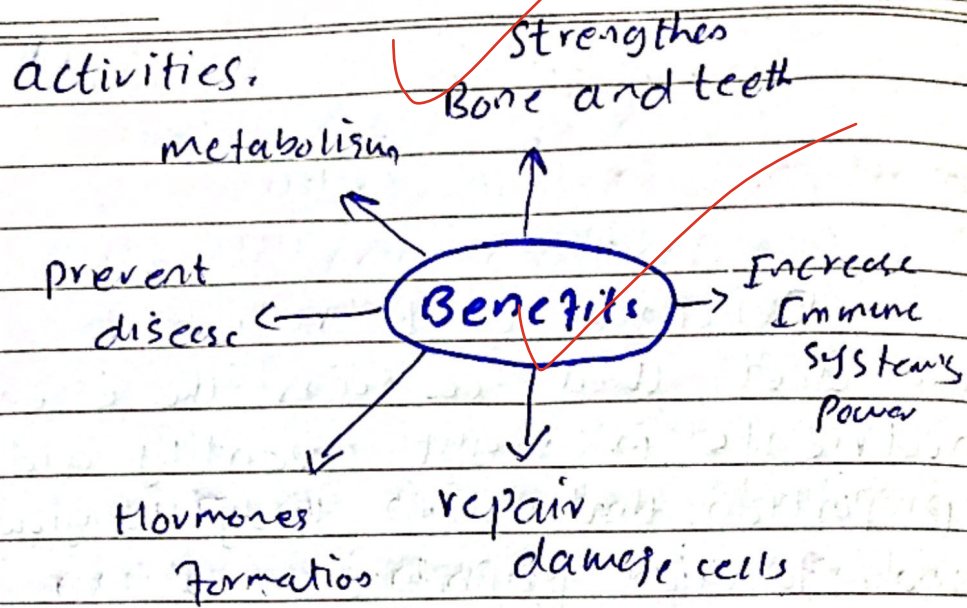


Benefits:

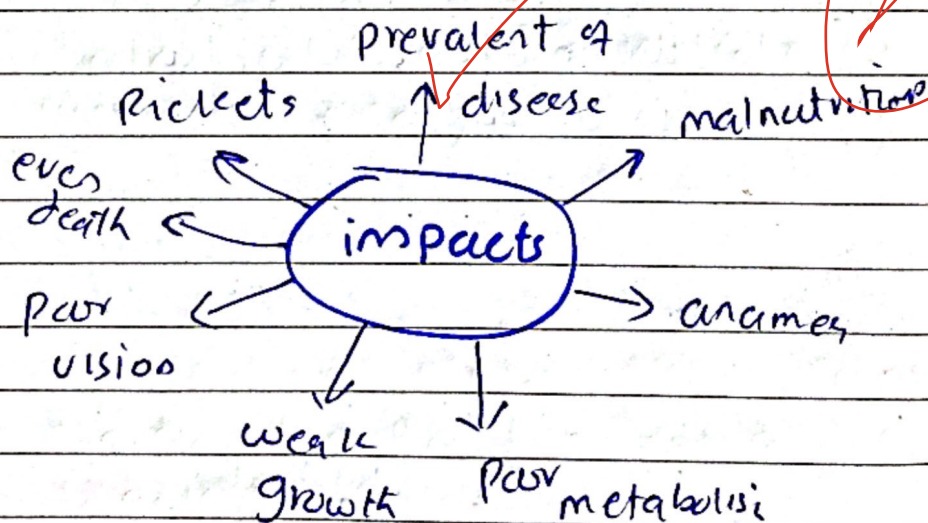
Balanced diet help body to grow and increase metabolic

Date: _____

Day: _____



what are the impacts of an unbalanced diet?



Question No: 2

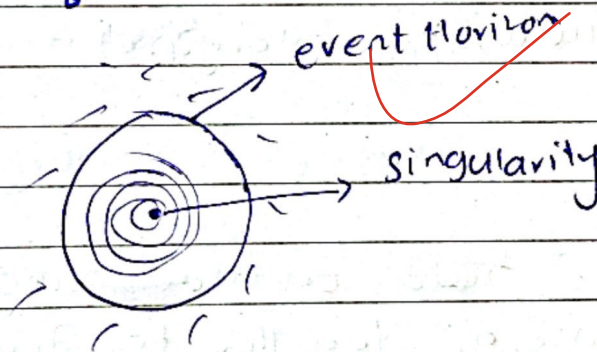
(a)

Black Hole

(i) Black Hole :

A black hole is an invisible body in space that has enough energy to capture even light, causing a loop to trap everything.

(ii) Diagram:



(iii) How black Hole Formed:

(a) Death of Stellar:

A star with time becomes inert as its fuel wipes out. So, it can sustain the gravity. It dies.

(b) EXPLOSION:

when fuel of star burns out, its core explodes.

(c) Supernova formed:

First the outer shell after explosion changes into a supernova, a bright light.

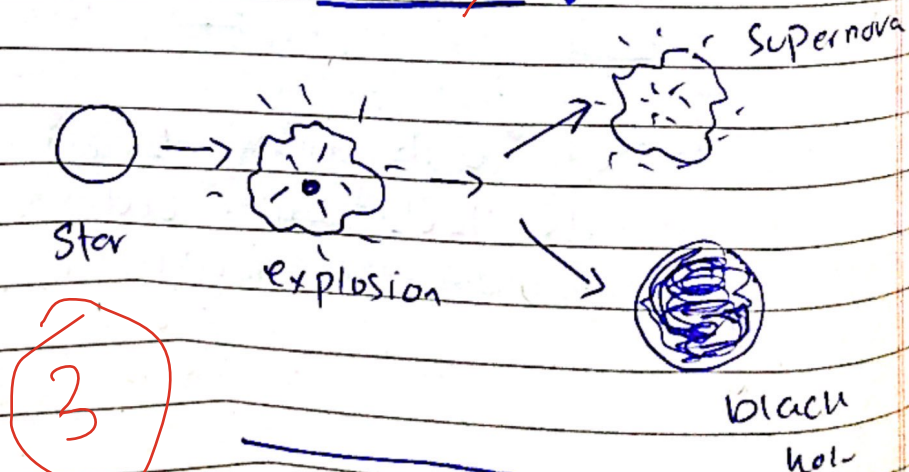
(d) Black Hole formed:

Core of the star after explosion change into a black hole with immense energy.

(e) merging of black holes:

Two or more small holes merge together to form a bigger black hole.

Diagram:



Date: _____

Day: _____

(b)

Octet rule

(a) Octet rule :

Octet rule in chemistry is a process of the completion of the outer most valence shell with maximum eight electron

(b) Concept :

"atom attains eight or two (duplet) electrons to get stability."

(c) Properties :

- Atom attain eight electrons
- It completes valance shell
- Ensures stability.

(d) example : Table salt NaCl

NaCl :

Configuration :

$\text{Na}^+ : 2, 8, 1$

$\text{Cl}^- : 2, 8, 7$

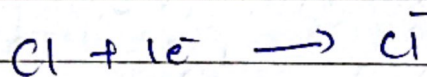
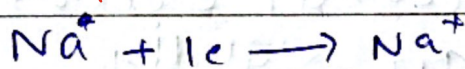
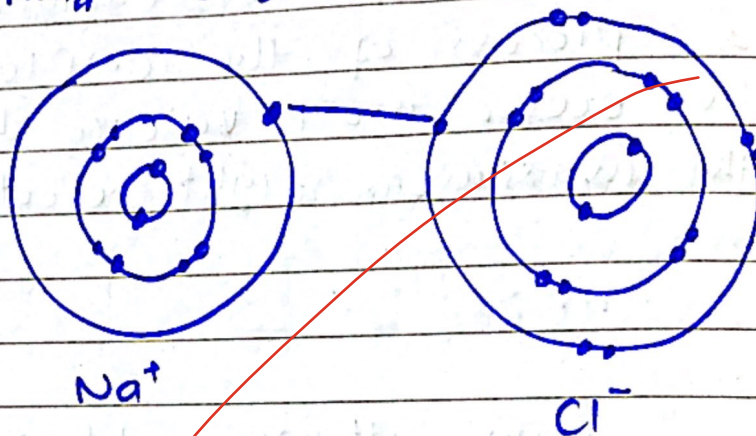
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Reaction:

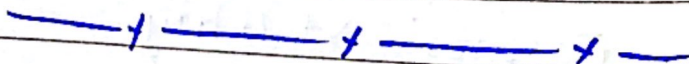
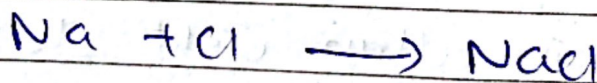
Sodium donates its one electron to chlorine, completely its outer most shell.

$$Na^+ = 2, 8, 1$$



(3)

over all reaction:



(C)

Uses of Radiations

(a) Microwave:

(i) Cooking:

microwaves are being used in microwave oven to cook food now a days.

(ii) Laboratory:

Various labs used microwaves to perform medical imaging.

(b) Radio waves:

(i) Communication:

Radio waves are a mean to communicate today.

example:

mobile networks

(ii) Remote control:

Various remote controls of home appliances used radio waves.

3

(d)
Agenda about AI

(a) Purpose of conference?

Rishi Sonak was then PM hosted this conference to counter unethical use of AI without regulations.

(b) Agenda about AI:

(a) Regulatory framework:

It was proposed to devise a moral and ethical regulatory framework to avoid threats.

(b) Laws and legislature:

There would be a proper legislation through parliament to check the AI's growth

(c) End of Biases:

Ethical monitoring to curb the use of AI bias during

Facial ~~recognition~~ recognition

(d) International cooperation

It was decided to cooperate on AI so that unethical use of AI could be mitigated.

SECTION II

Question : 7

Missing terms:

(i) 11, 13, 17, ——— 23

Solution:

11, 13, 17, 20 23

(ii) 10, 28, 91, 370, ———

Solution:

10, 28, 91, 370, 1855

91

9

915

364

3

370

5

1850

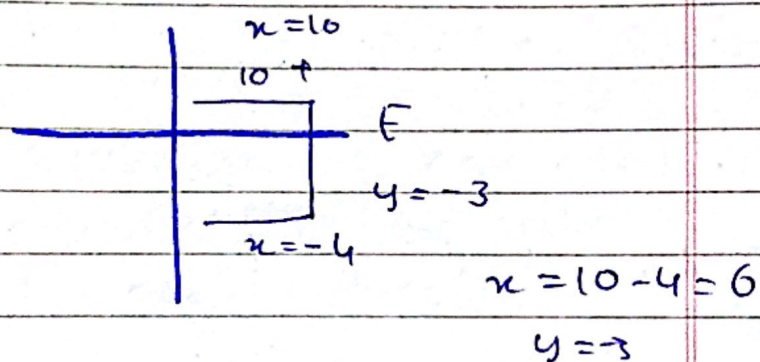
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10x2 = 20
28x3 = 84
91x4 = 364
370x5 = 1850
10+20+84+364+1850 = 2318

Q: NO: 8

Solution:

Data:



So,

$$d = \sqrt{(6)^2 + (-3)^2}$$

$$= \sqrt{36 + 9}$$

$$d = \sqrt{45}$$

Date: _____

(d)

MADRAS AS NBESBT

Then

BOMBAY AS CPNCBZ

$$\begin{array}{r} 91 \overline{) 364} \\ 82 \\ \hline \end{array}$$

$$\begin{array}{r} 455 \\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 28 \\ 28 \\ \hline 28 \\ 28 \\ \hline 0 \end{array}$$

(c)

probability

Solution:

$$= \frac{10}{16}$$

$$\begin{array}{r} 3 \overline{) 16} \\ 6 \\ \hline 16 \end{array}$$

$$\begin{array}{r} .331 \\ 16 \overline{) 100} \\ 48 \\ \hline 52 \\ 48 \\ \hline 4 \end{array}$$

$$\boxed{\text{yellow} = 0.333}$$