Q 8

Good for math work
Increase length of theory
portion
Add headings

a)

Let three consecutive odd numbers are

$$x, \quad x+2, \quad x+4$$

According to condition

$$(x) + (x+2) + (x+4) = 273$$
$$= x + x + x + 2 + 4 = 273$$
$$= 3x + 6 = 273$$
$$= 3x = 267$$
$$x = \frac{267}{3} = 89$$

So
$$x = 89$$
$$x + 2 = 91$$
$$x + 4 = 93$$

So three numbers are
$$89, 91, 93 \qquad Ans$$

Verification.
$$89 + 91 + 93 = 273$$

b) **(i)**

$$4, 16, 36, 64, 100, 144$$

(ii)

$$30, 29, 27, 24, 20, 15$$

(iii)

$$1, 7, 15, 25, 37, 51$$

iv)

0, 2, 6, 12, 20, 30, 42.

v)

48, 24, 72, 36, 108, 143

c)

i) SHIRT

ii) DANGER

iii) MOSTACH.

iv) LONDON

v) HOLIDAY

d)

Let age of Sara = x

and Sara's mother = $6x$

Ali = $2x$

According to condition after 3 year

$= (x+3) + (6x+3) + (2x+3) = 72$

$= x + 6x + 2x + 3 + 3 + 3 = 72$

$= 9x = 72 - 9$

$9x = 63$

$\boxed{x = 7}$

So age of Sara = $x = 7$

and age of her mother = $6x = 742$

also age of Ali = $2x = 14$

Q-6:-

a) Candidates are 3

let three candidates are

$x + y + z$ x, y and z

And their <u>votes</u>

$$x = 15,000$$
$$y = 10,000$$
$$z = 8,000$$

x has gained highest number

of votes so

x is winning candidate

And <u>Total votes are</u>

$$x + y + z = 15000 + 10,000, + 8,000$$
$$= 33,000$$

and percentage of x
would be

$$\% \, x = \frac{\text{votes of } x}{\text{Total votes}} \times 100 \%$$

$$\% \, x = \frac{15,000}{33,000} \times 100 \%$$

$$= 0.4545 \times 100 \%$$

$$= 45.4545 \%$$

$$\boxed{\% \, x = 45.5 \%}$$

Ans

b) **Ratios**

ratios of angle = 3:4:5
sum of all ratios = 12
No of angles = 3

and the sum of total angles = $180°$

so

First angle = $\frac{3^1}{12_4} \times 180 = \frac{1}{4} \times 180 = 45°$

Second angle = $\frac{4}{12} \times 180° = \frac{1}{3} \times 180°$

$= 120°$ $60°$

Third angle = $\frac{5}{12_1} \times 180°^{15} = 5 \times 15°$

$= 75°$

so three angles are
$45°, 60°, 75°$

c) let, Ther age of
$A = 6x$
$B = 7x$
and after 5-years
$A = 6x + 5$
$B = 7x + 5$
and it would equal to $7x, 8x$
According to corelution
$6x + 5 + 7x + 5 = 7x + 8x$
$13x + 10 = 15x$
$10 = 15x - 13x$ $= 10 = 2x$ $\boxed{x = 5}$

Age of $A = 6(5) = 30$
$B = 7(5) = 35$

Ans

c) Each group must have

4 boys & 6 girls

$\Rightarrow$ As total girls are 102

Groups $= \dfrac{102}{6} = \boxed{17 \text{ groups}}$

and for each boy group having 4 boys

No. of boys required $= 4 \text{ boys} \times 17 \text{ groups}$
$= 68 \text{ boys}$

30   68 : 102
          Boys : Girls

Q No 3

→ COP-28, which was held recently in Emirati city Dubai in Dec, which was annually conducted conference.

→ It highlits the impacts that fossil fuels are causing on the world. Pledges were made there:

→ Global transition away from fossil fuels
→ Committing a finance of $700 m worth
→ Tripling the renewable energy
→ Cutting, by 2030, methane reduction by 30 po
→ Declaration around food systems reselience.

However, developing countries are facing hurdles in their quest to tackle the impacts of go global warming.

FINANCE GAP:-

Pledges were made to allocate $700 million for developing

countries, this is very low cost commitment, as according UNDP, there is a need of ($215 - $387bn). (IPRI, COP 28, Dec 2023).

* <u>INVESTMENT GAP:</u>

Though they had commited to triple their renewable energy capacity by 2030. However, for this considerable investment is needed in renewable energy initiative, which has very less countries that can offer from their national exchequer.

* <u>Transition from fossil fuels :</u>

* For developing countries there needs a considerable amount of money to have transition from cheap, fossil fuels towards rather costly resource

3 b)   <u>BALANCED DIET</u>

Definition :-

"Balance diet is that diet that contains correct amount of nutrients needed for better functioning of any healthy human body.

Nutrients :-

"Nutrients are those substances that are very vital for the metabolic processes of human body".

Following are the main nutrients

* Carbohydrate
* Protein
* Vitomins
* Fats and oils
* Lipid
* Water is also important along with them

Diet vs Balanced diet :

* Diet also gives energy, but they me be a balance or not balance one. However, balanced diet besides giving energy also implies healthy functioning of body.

Effects of not having balanced diet .

→ Overtake of these nutrients or not balancing these nutrients and exceeding the correct amount leads to malnourishment, whereas undertaking less amount leads towards different types of related disease, hampering the normal functioning of body.

Q NO 3 - C

MACHINE LEARNING:

Machine learning, which is a subset of AI has revolutionized the world in the following ways.

Online Ads:

* By tracking the data obtained from the search pattern of the customers, machine learning gives them a targeted personalized ads to the customers, benefiting both customers and sellers.

Chat GPT:

Chat GPT a famous tool that responds to all the queries by user, are solving their problems are important tool by machine learning.

Health care:

Machine learning gives instant response on different health related problems of the patients that contact them through different apps.

Robotics & manufacturing:

Different types of robots and other manufacturing tools are used in improving the efficiency of manufacturing/ser process. These are learned through alot of different data feeded through them

Q NO 3 - d

3d) RAM & ROM:-

→ RAM means RANDOM ACCESS MEMORY, WHEREAS ROM means Read only memory

→ RAM is a volatile type of memory.

→ ROM is a permanent memory.

→ When users turned its GADGETS on/off, RAM memory erased while ROM remans intacts

→ RAM improves the processing speed, whereas ROM improves the storage capacity of the device.

→ RAM GB's memory requirement are far less than the GB's memory requirent of ROM

4 - 2 :

Solid waste management

① **Dumping** :

* First method of employing solid waste is dumping it into some areas reserved for it

* Very cheap and environmental hazard

② **Incineration :**
* Burning of waste
* Also cheap but cause air pollution.

③ **Recovery and recycling**
* A method in which useful but discarded items are used for next time.
* It results in
1) + energy conservation
2) + Consumption of new material get lesser

④ **Prolysis :**
Solid waste is chemically decomposed by heat without the presence of oxygen.

QUESTION (14-b)

Human heart:-

* Human heart is responsible for the circulation of the blood in the whole body

* Arteries and veins

Blood is pumped throughout the body by heart through arteries and veins. Arteries carry deox oxygened blood and are red in colour. whereas veins carry deoxygeneed and is blue in colour.

Working of Human heart

Human heart has four chambers. Two on left and Two on right. One is named Atrium and other is ventricle.

All the deoxygeneed bloods comes through veins which is then supplied to right atrium where deoxygeneed blood is exchange. CO_2 with oxygen

→ Oxygen is then transferred to left atrium, where it passes through left ventricle which in forms transfer the blood in the form of arteries.

Question 4c

Myopia vs. Hyperopia

Myopia	Hyperopia
* Also called as nearsightedness	* Also called as farsightedness
* Close thing can be seen clearly, whereas distant things cannot be seen clearly.	* Distant things can be seen clearly, whereas close things remain blurry
* Light falls in front of retina	* Light falls in behind the retina
* Collected by concave lens	* Corrected by convex lens

Major parts of eye

1. Cornea
2. Iris
3. Pupil
4. Retina

Q 4d

Uses:-

Microwave:-
* Cooking purpose
* Heating food.
* Communication in wireless technology

Ultraviolet:-
* Used in forensics for detecting bodily fluid.
* Used in remote controls

Xray:-
* Medical imaging for seeing an image internal structures
* Security Screening. et 21.