QUESTION-3

(a)

HURDLES IN TACKLING THE IMPACTS OF GLOBAL WARMING

Defination:

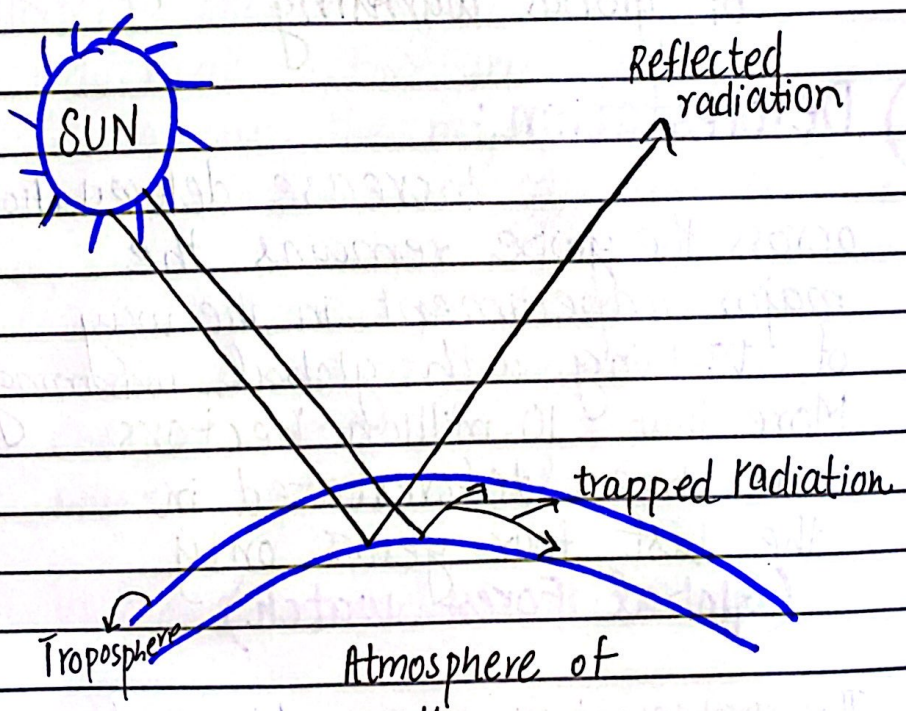
Global warming is a thermal phenomena in which heat is get trapped inside the atmosphere due to due to green house gases resulting in increase temprature

Increase in global warming in year 2023:

2023 is recorded as the hottest year

(Asian Development Bank)

Temprature is increased to 1.45°C above pre industrial level (Inter governmental Panel on climate change)



GREEN HOUSE EFFECT

Green house gases have the ability to absorb and trap the heat emitted by sun and the scatter it in atmosphere causing global warming

Hurdles in tackling the impacts of global warming

i) Deforestation:

Increase deforestation across the globe remains the major impediment in the way of tackling with global warming More than 10 million hectors have been deforestated in the last four years only (Global Forest watch)

This problem has been addressed in COP-28 resulting in the formation of green initiative programe and cooling pledge between the nations.

ii) Non-renewable energy sources

Non-renewable energy sources include coal, diesal, gas. These are major emitters of carbon in environment resulting in global warming.

Energy sector, agriculture sector, industrial sector and transport sector are the major users of non renewable energy sources

COP-28 emphasize on the transition of world toward renewable energy sources like solar, wind, hydel, tidel energy etc.

iii) Increase in industrialization

Industries are involved in releasese of plethora of pollutants in environment which contributes to global warming

COP-28 put emphasis on reducing the emission of gases by adopting advanced techniques.

iv) Population explosion

Increase in population results in increase consumption, increase production, increase industrialization and increase air pollution.

Population explosion remains on of the main factors in increasing global warming.

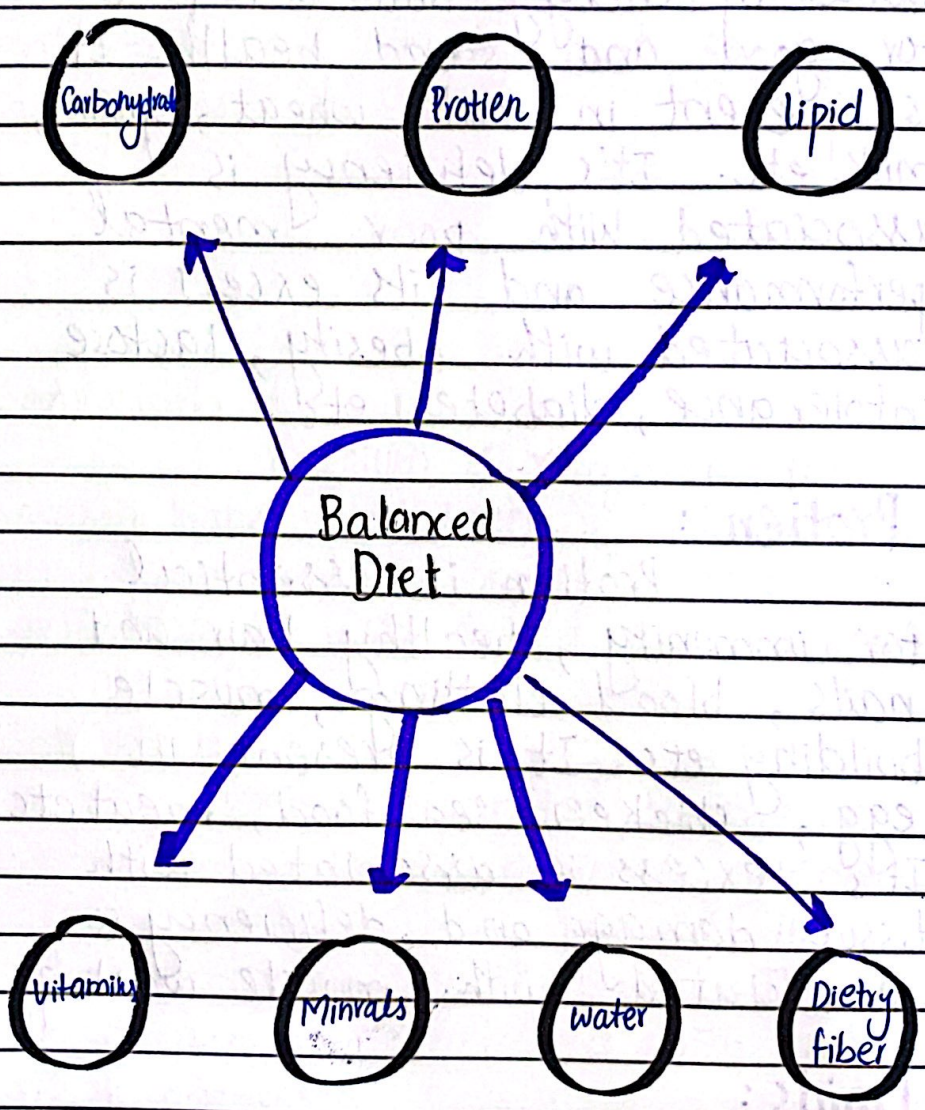
(b)

BALANCED DIET

DEFINATION:

Balanced diet is a diet which contain appropriate proportion of vitamins and minrals that is required for adequate health, growth and development of body.

Components of balanced diet:



A balanced diet consist of 7 essential components.

i) Carbohydrates:

It is the main source of energy that is required for good and sound health. It is present in oats, wheat, grains, milk etc. It's deficiency is associated with poor mental performance and its excess is associated with obesity, lactose intolerance, diabetes etc.

ii) Protien:

Protien is essentical for immunity, healthy hair and nails, blood clotting, muscle building etc. It is present in egg, chicken, sea food, meat etc. It's excess is associated with tissue damage and deficiency is associated with muscle wasting.

iii) Lipids:

lipids is essential for body as it is required for transport of water insoluble vitamins. It serves as cushion to organ & protect them against shock. It is present

in ghee, oil and other oily food. It's deficiency results in dehydration and excess is associated with increase in cholestrol level that is dangerous for heart.

iv) Minrels

a) calcium :

calcium is required for healthy bones and teeth. It is present in milk and diary products. It's deficiency is associated with osteoporosis

b) Potassium :

It is essential for nerve transmission and maintaining electrolyte balance in body. It is present in banana, dates, cereal etc. It's deficiency is associated with muscle tissue damage.

c) Sodium :

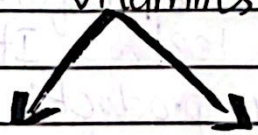
It is essential for proper fonctioning of brain along with maintaning electrolyte balance in body. It's

is present in table salt, unprocessed meat, sea food etc. It's deficency is associated with poor mental function and excels. is associated with hypertension.

(d) Potassium;

v) **Vitamins**

There are two type of vitamins



Water soluble vitamins (B complex)	water insoluble vitamins (A, D, E, K)
Vitamin B complex is essential for energy provision, RBC's production, growth and metabolism of body.	vitamin A is essential for vision, D is essential for bones, E is essential for skin and K is benifical for heart

vi) Water

water is the cheif constituent of body and it is required for hydration of body as well as proper metabolism. 6-8 glass per day is recommended for a person to drink per day.

Varing factors

Balanced diet vary for person to person due to the factors like age, gender, metabolism of a person etc.

(c)

ARTIFICAL INTELLIGENCE

Defination :-

AI is the stimulation of human intelligence into a machine which can perform the task that was previously done by humans.

Machine learning is the subset of AI. It has been increasing used in today's world.

It has revolutionized the world in following manner

1) Intelligence tutoring system is being used which generate information and involved in monitoring of student's and teachers progress

2) People can use the AI generated programes like chatBots, dialouge base tutoring system.

3) Machine learning has contributed to the displacement of teachers in institute

4) Education focus is shifted from knowledge retention to spoon fed approach

5) vast amount of information is easily available to people

on just one click

It has revolutionized the world in both positive and negative manner

On one hand it become easy for an individual to learn anything from it and on the other hand the wrong use of AI is a threat to the world.

AI generated programes for machine learning include

i) Chat Bots
ii) Chat GPT
iii) Intelligence tutoring system
iv) Formative assesment programe
v) Dialouge based tutoring system

(d)

RAM / ROM

Computer =

It is an electronic device that can be used for any digital purpose like research, gaming etc.

Ram and Rom are the parts of computer that is involved in storage of memory

RAM	ROM
Defination	
RAM indicates to random access memory	ROM indicates to read only memory
Function	
It is responsible for the permanent storage of information	It is responsible for temporary storage of information

It donot allow to edit any storage	It allows to edit the stored product
It is non volatile memory	It is volatile memory

QUESTION - 4

(a)

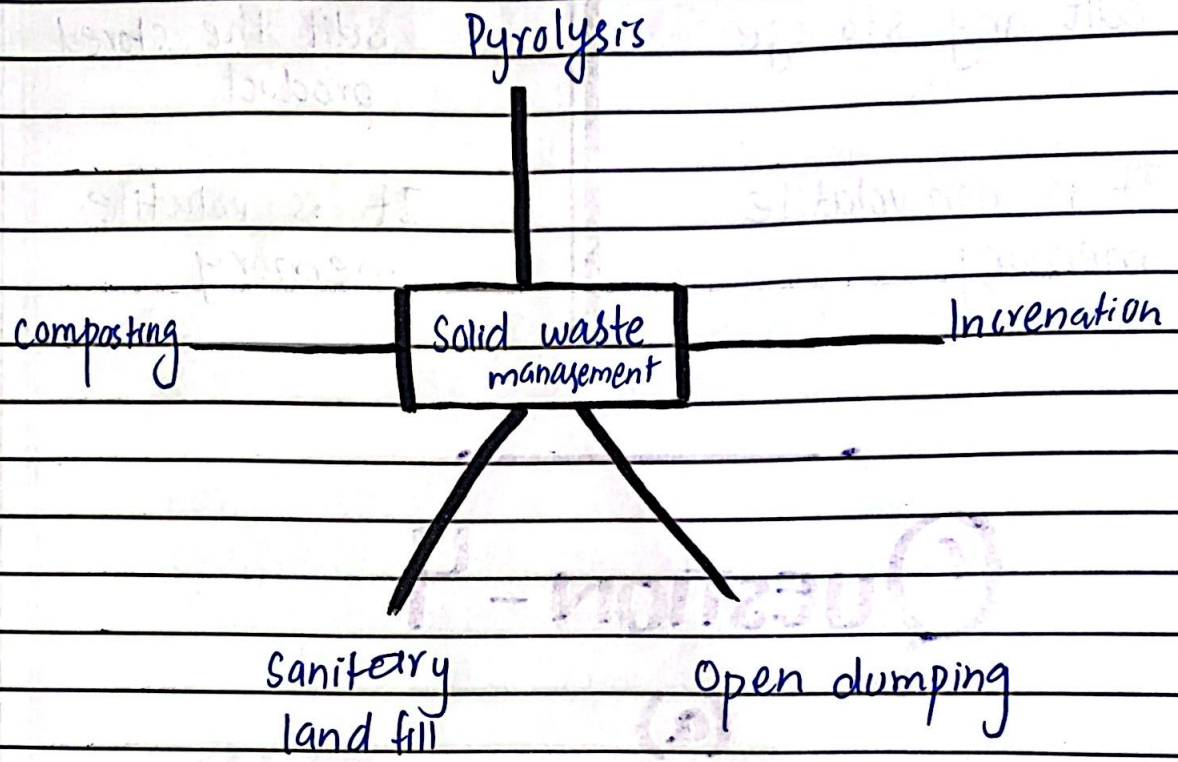
SOLID WASTE MANAGEMENT

Defination:

Solid waste management is a gracious term for trash management It is involve in the collection, recovery and disposal of waste through a controlled method

Methods:

Following five methods are used for solid waste management.



i) Open dumping :

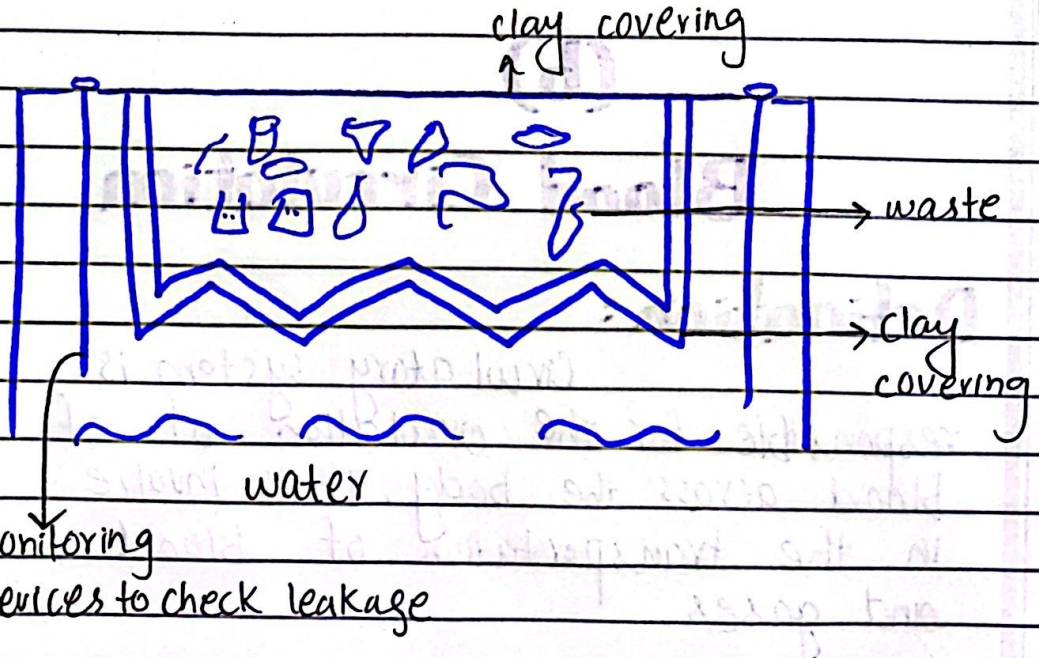
In this method the solid waste is dumped in open spaces This method is been strongly discouraged in RIO declaration. It was suggested that the dumping sites should be far away from residential areas, water bodies etc.

ii) Composting:

In this method microorganisms are used for the decomposition of waste material. The resulting material after decomposition is called compost which is very benefical for soil as it acts as fertilizer

iii) Sanitary land filling:

This method is used to fill the land with waste. A clay sheet is spread to prevent the leakage of waste around the soil



Sanitary land filling technique

iv) Increnation:

In this process, solid waste is combusted other than organic waste. After combustion the resulting product is ashes or small amount of liquid or semi solid waste

v) Pyrolysis:

This method is similar to increnation where waste is combusted at increase heat and more pressure and in the absence of oxygen. The temprature is more than 450 °C.

(b)

Blood Circulation

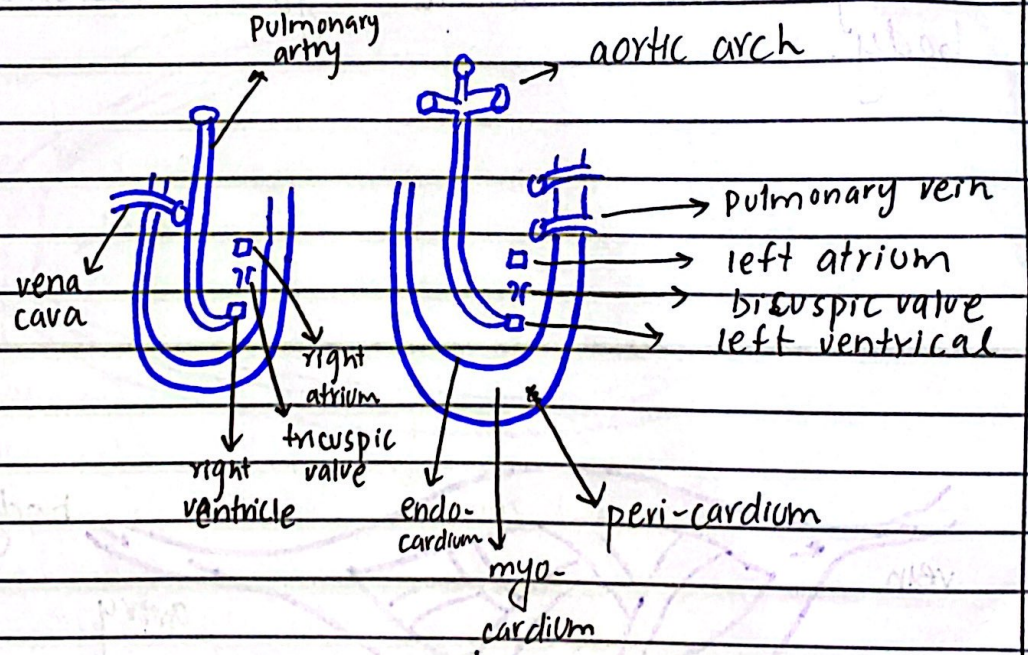
Defination:

Circulatory system is responsible for the circulation of of blood across the body. It is involve in the transportation of blood and gases.

Human Heart:

It is a muscle that is involve in pumping of blood. It supplies the blood to whole body. It consist of three layers

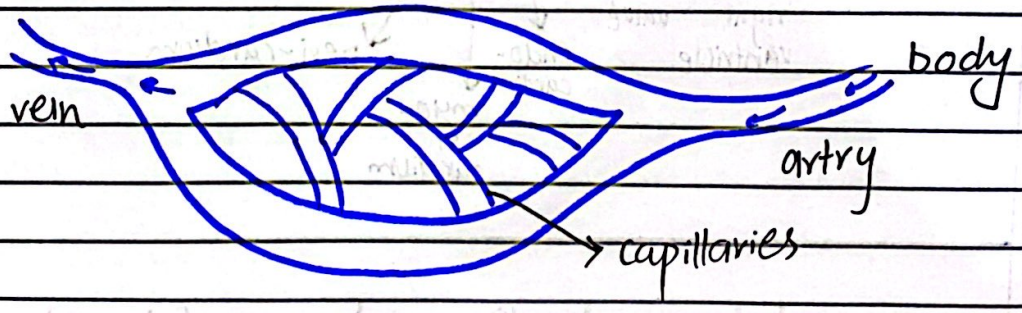
i) endo cardium
ii) myo cardium
iii) peri cardium



Internal (df) anatomy of heart

Working of human heart

Blood from body goes into venacava, then it pases through right atrium and reaches tricuspid valve where it contracts preventing its back flow. Then it goes to lungs through pulmonary artry. There the oxygenation process happen. Then the oxygenated blood comes through pulmonary vein to rieft atrium, then it goes to bicuspid valve, then by passing through aortic arch it goes toward body.

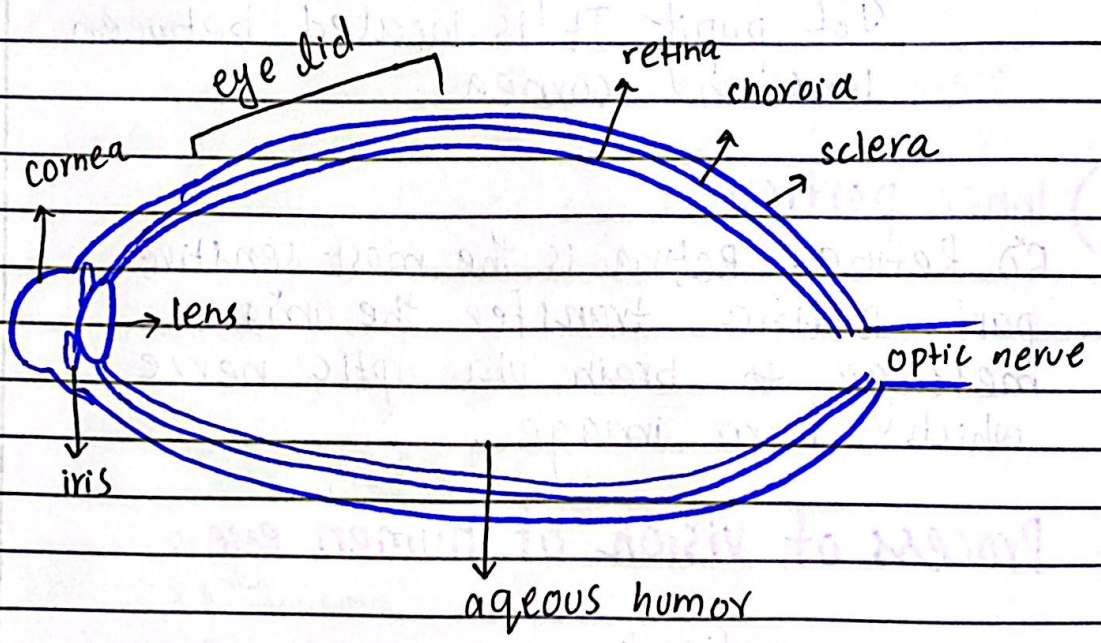


circulatory system

(1)
EYE

Defination:

Human eye is a censory organ which is responsible for the vision to the body.



Anatomy of human eye

Human eye consist of three parts

1) **Outer Part**

i) sclera: It is the outer most part of

eye. The white portion of eye is sclera

ii) cornea:

The dome shape part of eye is cornea. It is the enterence point of light.

2) Middle portion:

i) Iris: It is the coloured part of eye. It is responsible for movement of pupil. It is located between lens and cornea.

3) Inner portion:

i) Retina: Retina is the most senstive part. Retina transfer the imig message to brain via optic nerve which form image.

Process of vision of human eye:

light

↓

cornea

↓

lense

↓

ratina

↓

optic nerve

↓

brain

↓

image formation

Myopia:

It refers to the poor vision of eyes. It is associated with short-sightedness problem

Hyperopia:

It refers to the far-sightedness problem. The person becomes unable to clearly view distant objects.

(d)

USES

i) Microwave

Microwave have higher wavelength than infrared waves and shorter than radiowaves It's energy and frequency is higher than radio wave and lower than infrared wave

Use:

It is widely used for heat source in oven.

It is also used in wireless devices like tv remote, A.C remote etc.

ii) UV rays :

UV rays are electromagnatic rays with higher wavelength than x-rays and shorter wavelength than (ir) visible rays. It's energy and frequency is higher than visible rays and lower than x-rays.

Uses :

- It is widely used for the sanitization of water.
- Because of its high energy and frequency, it can cause tissue damage

iii) X-rays :

X-rays are electromagnatic rays with higher wavelength than gamma rays and shorter than UV rays.
It's energy and frequency is higher than UV rays but lower than gamma rays

Uses :

- It is widely used for diagnostic purpose

Question-8

(a)

Solution:

let the no. = x

$$x + x + x = 273$$

$$3x = 273$$

$$x = \frac{273}{3} = 91$$

the nearest consecutive odd numbers are

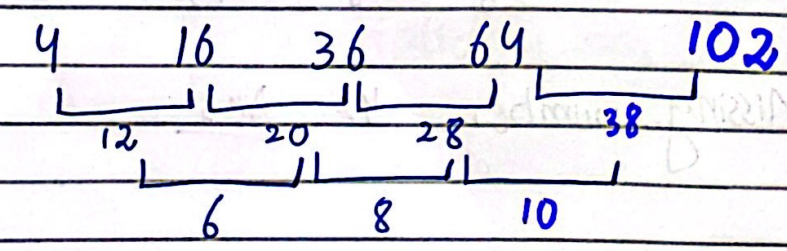
89, 91, 93

$89 + 91 + 93 = 273$ Ans

(b)

Missing Number

i) 4, 16, 36, 64, ___ ?



Missing number = 102 Ans

ii) 30, 29, 27, ?, 20, 15

30, 29, 27, 24, 20, 15

-1 -2 -3 -4 -5

Missing number = 24 Ans.

iii) 1, 7, 15, 25, ?, 51

1, 7, 15, 25, 37, 51

6 8 10 12 14

Missing number = 37 Ans

iv) 0, 2, 6, 12, 20, 30, ?

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

2 4 6 8 10 12

Missing number = 42 Ans.