

Date: _____

①

Day: _____

QUESTION: 4

QUESTION: A (Part A)

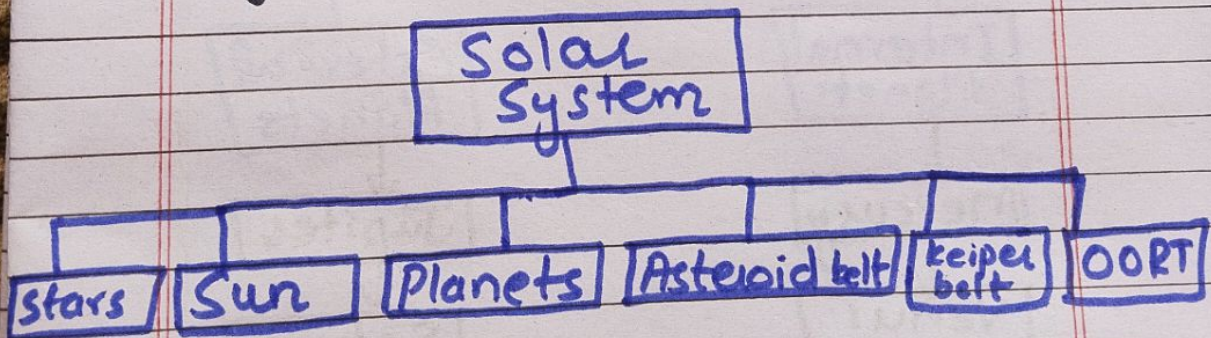
Write a short note on solar system.

ANSWER:

Solar System:

Solar system is the part of galaxy. There are several solar systems in one galaxy.

Components of Solar System:



(1) Sun

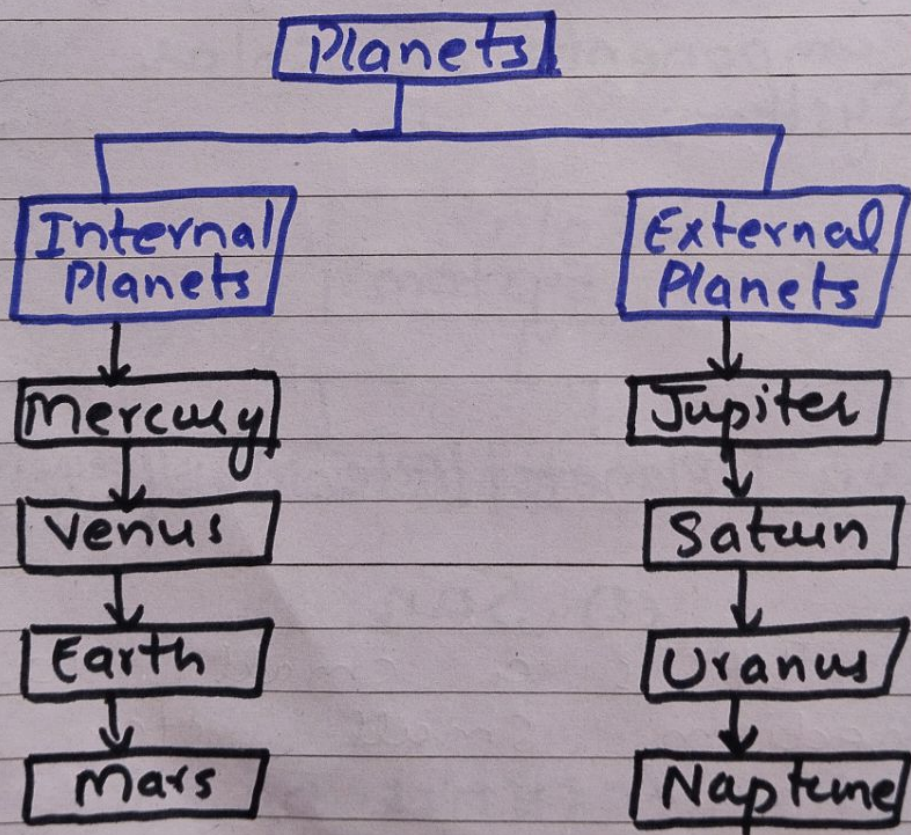
It is a small to medium small star

characteristics of Sun

- 1) It is present in the center of galaxy
- 2) It takes 250 million years to revolve around

- 3) galaxy. The distance between sun and earth is 150 million km.
- 4) Sun has strong magnetic field
- 5) The mass of sun is 1.9×10^{30} kg.
- 6) The temperature of earth at core is 15 million degree celcius.

2) Planets



There are planets in the solar system

1) Internal Planets

- 1) The internal planets consist of Mercury, Venus, Earth, Mars.
- 2) These are close to sun
- 3) They have fast revolution
- 4) They have no rings like external planets.
- 5) They have less moons i.e. Earth consists of 1 Moon [Luna], Mars consists of 2 moons.
- 6) They are highly dense

2) External Planets

- 1) The external planets consist of Jupiter, Saturn, Uranus and Neptune.
- 2) They are far away from sun
- 3) They have slow revolution in comparison to ^{that of} internal planets.
- 4) They have more ~~rings~~ ^{moons}.
Jupiter, Saturn, Uranus and Neptune consists of 67, 62, 24, 14 ~~rings~~ ^{moons} respectively
- 5) They have more rings as compared to internal planets.
- 6) They have high magnetic

7) ^{Jupiter} They are the four largest planets of the Earth.

3) Asteroid Belt

These are rocky bodies present between internal and external planets.

→ Asteroids are localized in an asteroid belt.

1) Meteorites

These are large rocky bodies present in the solar system.

→ They are not localized like that of asteroids.

5) Keiper belt:

Keiper belt consists of dwarf planets, nebulas and solar dust etc.

6) Stars

These are ball of gasses present in the solar system.

Part "B"

Importance of pituitary gland

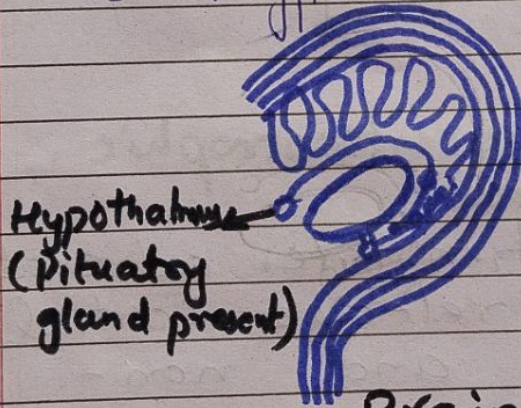
Answer:

Pituitary Gland: Master Gland of the body:

It is one of the endocrine gland.

→ Location:

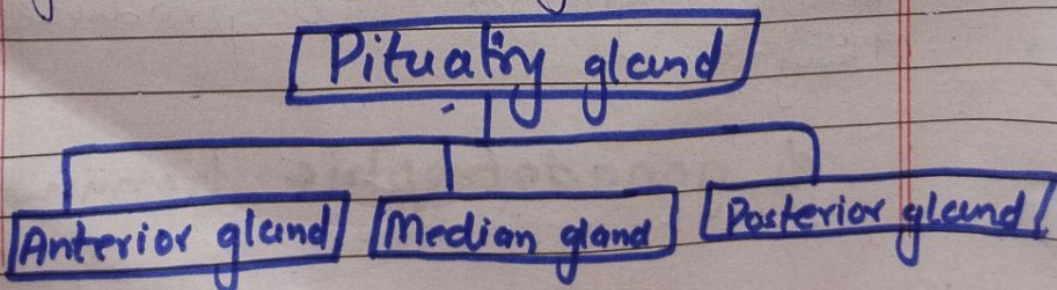
It is present in the hypothalamus of brain



Brain Structure

⇒ Size:

The size of pituitary gland is 0.5g



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6 Functions of Pituitary Gland:

1) Function of Anterior part of Pituitary gland:

Anterior pituitary gland releases different hormones. Each hormone perform a specific function.

a) Somatotrophic Hormone:

This hormone helps in the growth of the body.

b) Adrenocorticotrophic hormone:

It stimulates adrenal gland to release cortisol, adrenaline and non-adrenaline hormone.

c) Thyroid Stimulating hormone:

It stimulates thyroid gland to produce thyroxin.

d) gonadotrophic hormone:

It has a role in reproduction

e) **Luteinizing hormone**
It helps in reproduction.

f) **Follicle stimulating hormone:**

It has a role in reproduction.

g) **Prolactin hormone:**

It helps in milk production in female

2) **Functions of middle part of Pituitary gland:**

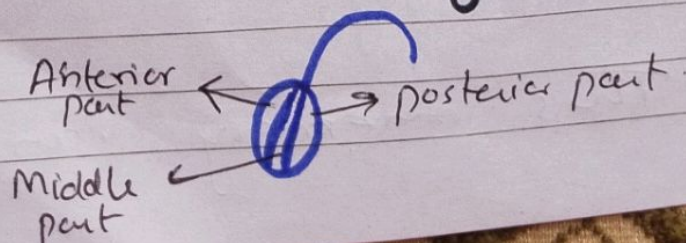
a) **Melanophore stimulating hormone:**

It activates melanocytes cells to produce melanin.

3) **Function of posterior part of Pituitary gland:**

It helps in storage of hormone.

Structure of Pituitary gland



Part "C"

Differentiate between RAM & ROM; also define the term Nibble, USB and motor board

Answer:

Differentiate between RAM and ROM:

(A) Random Access Memory (RAM):

i) Volatile Memory:

It is a volatile memory means it is temporary memory.

ii) Easily Accessible by CPU:

This memory is easily accessible by CPU.

iii) Read and Write memory:

This memory can

be both read and written.

iv) NOT accessible after switching off computer:

This memory is not accessible after switching off computer.

v) Costly:

RAM is a costly memory.

vi) Examples:

Static and dynamic RAM are the example of RAM.

B) Read Only Memory (ROM):

i) Non-volatile memory:

It is a type of memory which is permanent and non-volatile.

(ii) ~~Not~~ Unaccessible by CPU:

This type of memory is not accessible to CPU.

(iii) Read-Only-Memory

Unlike RAM, ROM can only be read.

(iv) Accessible after Powering off computer.

This memory remains even after switching off computer.

(v) less costly:

This type of memory is less costly as compared to RAM.

(vi) Example:

The example of ROM is PROM.

⇒ Definition of Nibble:

It is the memory unit of storage devices.

→ 1 Nibble is equal to 4 bit

1 Nibble = 01 bit

⇒ USB:

It is the permanent storage device.

→ It can be easily carried from one place to another.

→ It is an example of secondary storage device.

⇒ Mother Board:

It is a circuit board inside the computer.

Part "d"

Answer:

COP-29

The environmental conference held in Azerbaijan, Baku from 11-22 November of 2024.

Limiting temperature to 1.5°C:

In the Conference of Parties (COP-29), different countries pledged to limit the earth temperature to 1.5°C above pre-industrial level.

Reasons of limiting temperature to 1.5°C.

There are various reasons of limiting temperature to 1.5°C.

(A) Melting of Glaciers

- 1) The rise in temperature leads to melting of glaciers.

As per NASA, "Himalaya glaciers fastest melting glaciers"

(B) Rising Sea Level:

The rising temperature leads to rising sea level.

As per UNEP, "there is a rise of 8 inches in the sea level as compared to previous years."

(C) Floods:

The melting of glaciers and rising sea level leads to floods. Floods affect the infrastructure and economy of a country.

According to National Disaster Management Authority of Pakistan, "Floods in 2022 causes \$30bn lose to Pakistan's economy".

(d) Heat Waves:

The increase in temperature leads to heat waves. Heat waves disturb human body, daily functions

Measures to limit the ^{rising} temperature above 1.5°C :

(A) Phasing out fossil fuel:

Fossil fuels release gases like CO_2 , NO_x , SO_2 which cause green house effect and increase the temperature of earth.

In this conference a more emphasis was given on phasing out the burning of fossil fuel.

(B) Use of renewable energy:

Use of renewable energy ~~had~~ as they have low carbon footprints.

QUESTION: 2

Part "A"
ANSWER:

Difference between
Igneous and Metamorphic
rocks:

1) Igneous Rocks:

The type of rocks
which are formed from
the molten rocks.

Characteristics:

a) Dark Colour:

They are dark in
colour.

b) Absence of oil and fossils

Igneous rocks do
not have oil and
fossil due to high temperature

c) Non Porous:

Igneous rocks are

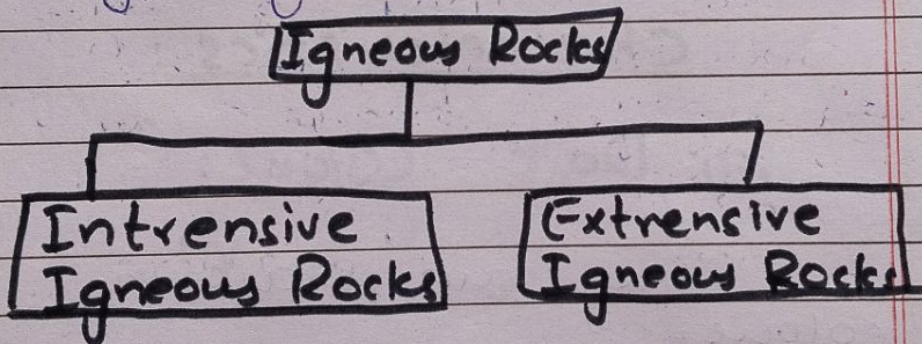
non porous.

(d) High durability:

Igneous rocks are highly durable and used in construction activities.

(e) Types of Igneous rocks:

There are two types of igneous rocks.



⇒ Intensive Igneous rocks:

They are formed inside the surface of soil from magma. eg Gabbro rocks

⇒ Extensive Igneous rocks:

They are formed outside the surface of soil from lava. eg Basalt rocks.

2) Metamorphic Rocks:

They are formed from the weathering of igneous and sedimentary rocks under high temperature and pressure.

Characteristics

i) Durability:

They are less durable than igneous rocks.

ii) Gems:

Gems are present inside metamorphic rocks.

iii) Presence of layers:

→ Types of Metamorphic Rocks

Metamorphic Rocks

Foliated
Metamorphic
Rocks

e.g. slate

less Foliated
Metamorphic
Rocks

e.g. Marble

Part "B"
ANSWER:

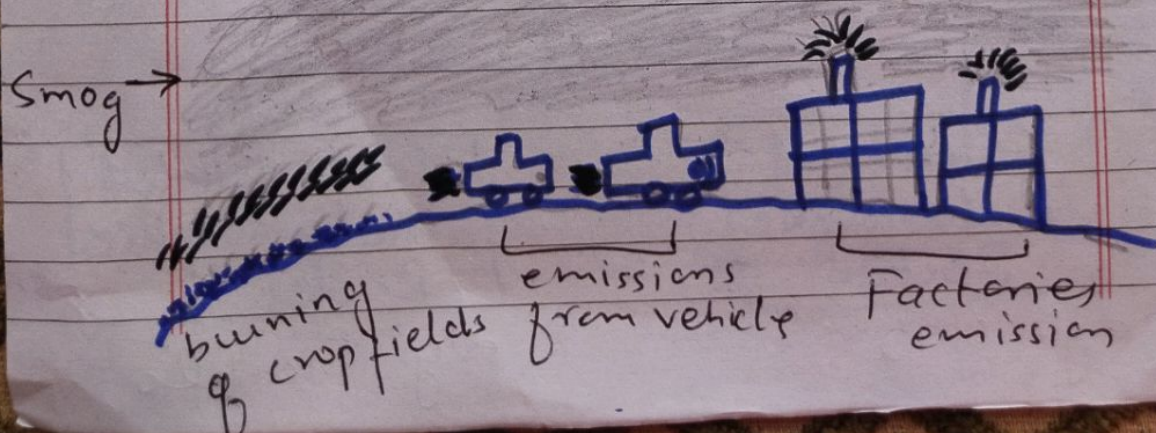
SMOG:

The combination of smoke and fog is called smog.

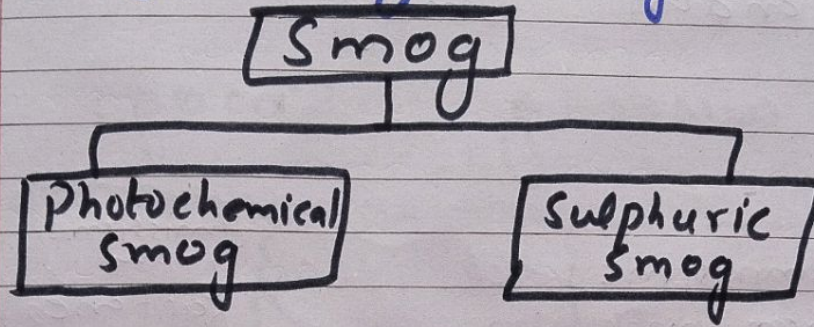
Formation of Smog:

During winter when the temperature is low and there is fog. Gases and dust release from different sources can not escape from the atmosphere. They get trap inside the earth atmosphere. This phenomenon is called Smog.

Smog formation
due to low temperature



Types of Smog:



1) Photochemical Smog:

When sunlight react with nitric oxides (NO_x) released from transport and factories, it results in the formation of ~~the~~ photochemical smog.

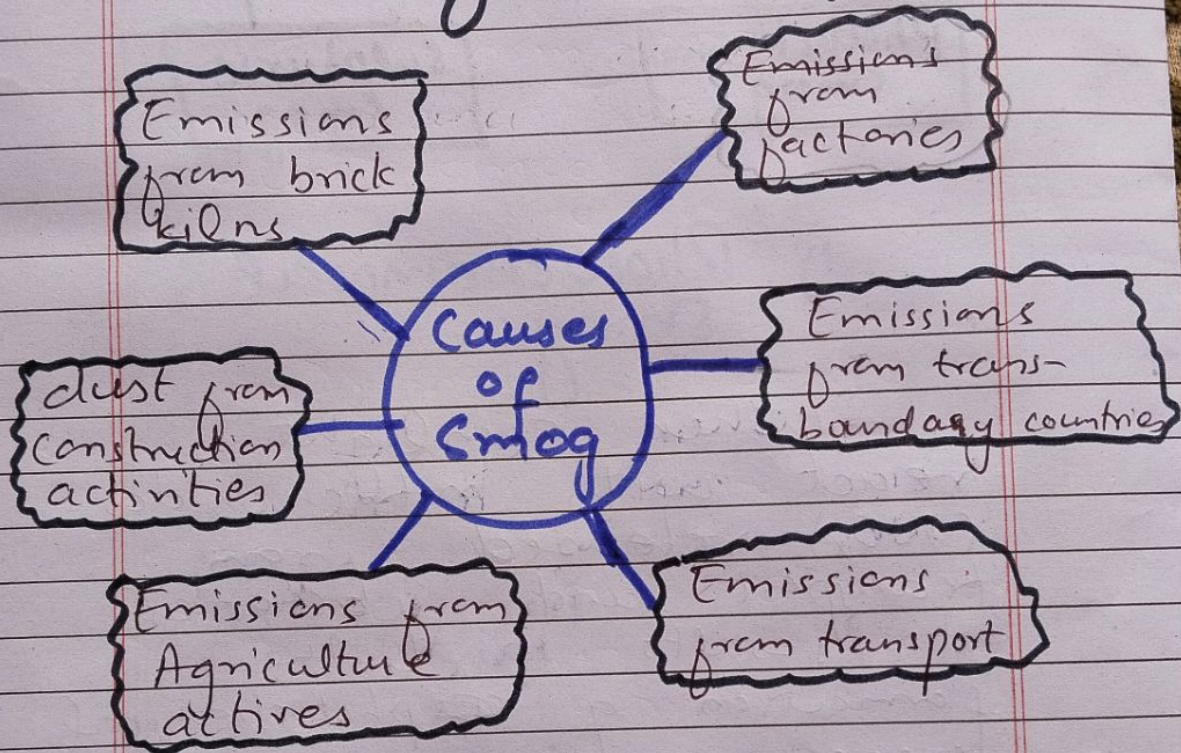
→ Photochemical smog is also called Los Angeles Smog.

2) Sulphuric Smog:

The smog which is formed from sulphur oxide emissions is called sulphuric smog.

→ It is also called London smog.

Causes of Smog:



Solutions of Smog:

- 1) Use Euro-6 engines in car to reduce emissions.
- 2) Use technology to remove agriculture stubble than burning fields.
- 3) Use adsorption and cyclone method to reduce dust.
- 4) Cooperation with India to avoid transboundary emissions of gases.
- 5) Smog tower in China to reduce smog.

Part "C"

ANSWER:

Disaster Risk Management:

The ^{authority} procedure of to eliminating the likelihood of disasters and is called disaster risk management.

Risk Assessment:

It is one of the steps of disaster Risk management to avoid disasters.

Importance of Risk Assessment:

(i) Zoning of houses:

Risk assessment helps in the zoning of area. As a result, the construction of houses are forbade at high disaster risk location.

ii) Evacuation of people:

Risk Assessment guide the authorities to evacuate people from disaster prone areas.

iii) Allocation of Resources:

Due to risk assessment financial and medical resources are allocated for disaster risk areas.

iv) training of local people:

After risk assessment, those areas which have high probability of disaster the local people are trained to mitigate life losses during disasters.

v) Estimate damages:

Risk assessment

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provides an estimate
of losses that can occur
in future due to disaster.

Part "D"

Short Sightedness:

It is an eye defect in which a person can see ~~so~~ near objects but not things present far away.

Scientific name:

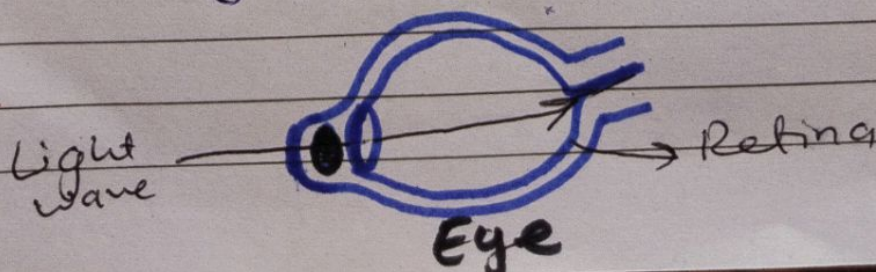
It is also called Myopia

Symptoms:

- 1) difficulty during reading
- 2) Repeated blinking of eye
- 3) Headach.

Correctional Methods:

- 1) Use of concave lens.
- 2) Use of contact lenses
- 3) Eye surgery to treat short sightedness.



Long Sightedness:

It is an eye defect in which a person can see far away objects but not near objects.

Scientific name:

The scientific name is hypermetropia.

Causes:

Light wave do not focus on retina.

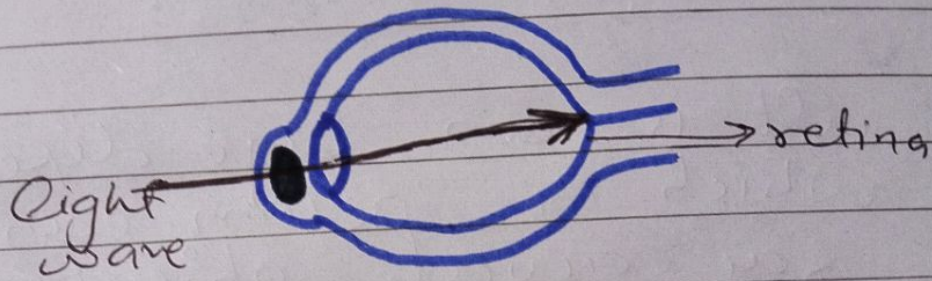
Correction Methods

i) Convex lens focus image light on retina. As a result image is formed at right place.

ii) Contact lenses

iii) Laser surgery can also treat long sightedness.

Diagram:



Treatment of
long sightedness with
convex lens:

SECTION: B

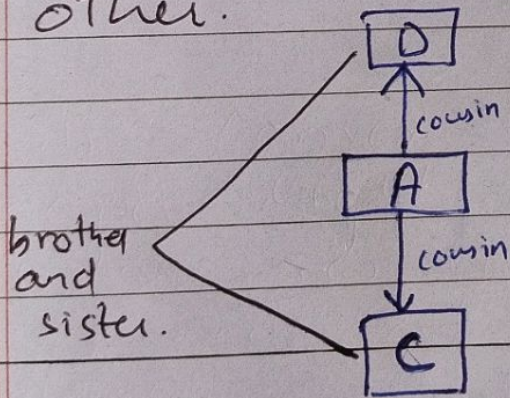
QUESTION: 7

Part "B"

C is A's father
nephew = C is A's cousin.

D is also the cousin
of A but not the
brother of C = It means
D is the sister of C
and cousin of A

= D and C are sister
and brother of each
other.



Part "c"

iv) 13, 24, 46, 90, 178, _____

Solution

13, 24, 46, 90, 178, _____

$$13, 24, 46, 90, 178, \underline{354}$$

$\begin{array}{cccccc}
 \times 2 = 26 - 2 & 24 \times 2 = 48 - 2 & 46 \times 2 = 92 - 2 & 90 \times 2 = 180 - 2 & 178 \times 2 = 356 - 2 \\
 \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\
 & & & & \underline{354}
 \end{array}$

Every next number is obtained by multiplying it with 2 and subtract 2 from the answer.

Hence the missing number is 354.

v) 4, _____, 144, 400, 900, 1764

Solution

square of the number series

$$4, \underline{100}, 144, 400, 900, 1764$$

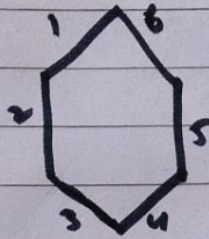
$\begin{array}{cccccc}
 \downarrow & \downarrow & \downarrow & \downarrow & \downarrow & \downarrow \\
 2^2 & 10^2 & 12^2 & 20^2 & 30^2 & 42^2
 \end{array}$

Hence the missing number is 100.

QUESTION: 8

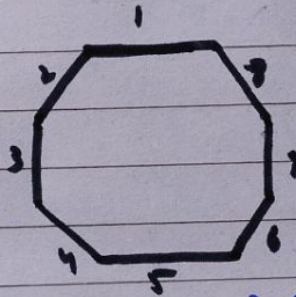
Part "c"

1) Hexagon:



6 lines of symmetry

2) Octagon:



8 lines of symmetry