

Part - II

(Section - A)

Q: 02

(i) RAM & ROM

RAM and ROM are different types of memory which are present in the computer. RAM and ROM are called internal and primary memory. Both has functions different. RAM (Random Access Memory) used to perform various tasks this memory called Primary Memory. Where ROM (Read only memory) used as storage purpose. The main difference between is given below:

(i) RAM (Random Access Memory)

RAM is the CPU's internal memory in the form of hardware device in the computer's mother board. RAM is a volatile memory. RAM is also known as Primary memory. It is generally limited and smaller than ROM. While RAM is further divided into two parts SRAM (Static Random Access Memory) and DRAM (Dynamic Random Access memory), these both are used for circuit purposes.

(ii) ROM (Read Only Memory)

ROM refers to read only memory. It is a type of non-volatile memory. It is also called primary memory because programs and data stored in it, only can be read but not write while RAM can read and write both function.

It can be said that Ram is a volatile memory, data stored in RAM can be retrieved and altered. It is very fast in small size while ROM is non volatile memory, just can be read, very slow and larger size.

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(ii) Network and Internet

The Network is a basically association of 1 or additional computer place in surrounding for the purpose / different projects. And Internet is that relationship of computers which is connecting them everywhere of Planet. The term Network is described under:

(i) Network:

A computer network is group of computers / interconnected nodes or computing devices that exchange data and resource for different purpose of communication. Although similar types of Network has been invented. The main types of network are two.

(i) LAN (Local Area Network)

LAN connects computers in a limited Physical Area such as offices, school, universities, hospitals etc. by means of links (wire, cables, Fiber optics wifi) that transmit data rapidly.

(ii) WAN (Wide Area Network)

A computer network which connect computers in a smaller and large networks over greater geographic areas, countries, different continents. It is linked with the cables, optical fiber or a "satellite".

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(ii) Internet.

Internet is the largest wide area network a collection of networks and gateways linking billions of computer users on every continents. It's possible to access information, communication in the world.

(iii) GPS and GIS

(i) GPS

GPS refers to Global Positioning System. It is a space based global navigation satellite system that provides reliable location and time information in all weather and at all times. First GPS was invented by US Department of Defense and runned with 24 satellites, in 1973.

Application of GPS:

GPS is considered a dual use meaning it has been significant and civilian application, surveying, map-making, navigation, target-tracking missile and projectile are the main military used of GPS.

(ii) GIS

It refers to Geographical Information system. It is a systematic integration of computer hardware and spatial data for capturing, storing, displaying purposes.

Application of GIS:

used for mining, exploration, electricity load, shortest routes for travelling, visualize and crime incident etc.

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(iv) Byte and Nibbles

i) Byte:-

A Byte contains 8 bits. It can be arranged into 256 unique combination to represent values from 0 to 256

ii) Nibble:-

A Nibble is group of 4 bits. It is arranged between 0 to 15. means it can present only 16 values.

(v) Natural Satellite and Artificial Intelligence:-

(i) Natural Satellite:-

A Natural satellite is any celestial body in space that orbits around a larger body
▷ Moon is called the natural satellite. It revolves around the earth.

(ii) Artificial Intelligence:-

Artificial Intelligence is a wide ranging branch of computer science concerned and building smart machines cable of performing tasks that typically require human intelligence. It have machine learning and deep learning processes.

▷ It was firstly invented by christopher strachey in 1951.

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Q: 3

Ans

a) How Black hole is formed From stars.

A black hole is formed by the death of a massive star. At the end of massive star's life, the core becomes unstable and collapses in upon itself, and the star out layers. Meaning that outer layers are blow away. The crushing of weight of constituent matter falling in from all sides compresses the dying star to a point of zero volume and infinite density called the singularity.

b) How cyclones are formed:

Cyclones are formed due to many reasons. Warm and moist air over the ocean riseses.

- ▷ Due to surroundings high-pressure areas, air flows into low pressure.
- ▷ Heat rising.

c) Causes of Flood:-

Flood occurs for a number of reasons all around the world. Flood is caused by a variety of human factors, including poorly built infrastructure. There are numerous natural causes of floods.

- ▷ Heavy rains:- Most straightforward explanation for flooding
- ▷ Over flowing rivers:-
- ▷ Broken Dams
- ▷ Urban Drainage Basins, Tsunamis, Lack of vegetation and many other reasons.

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(D) Energy produced in sun

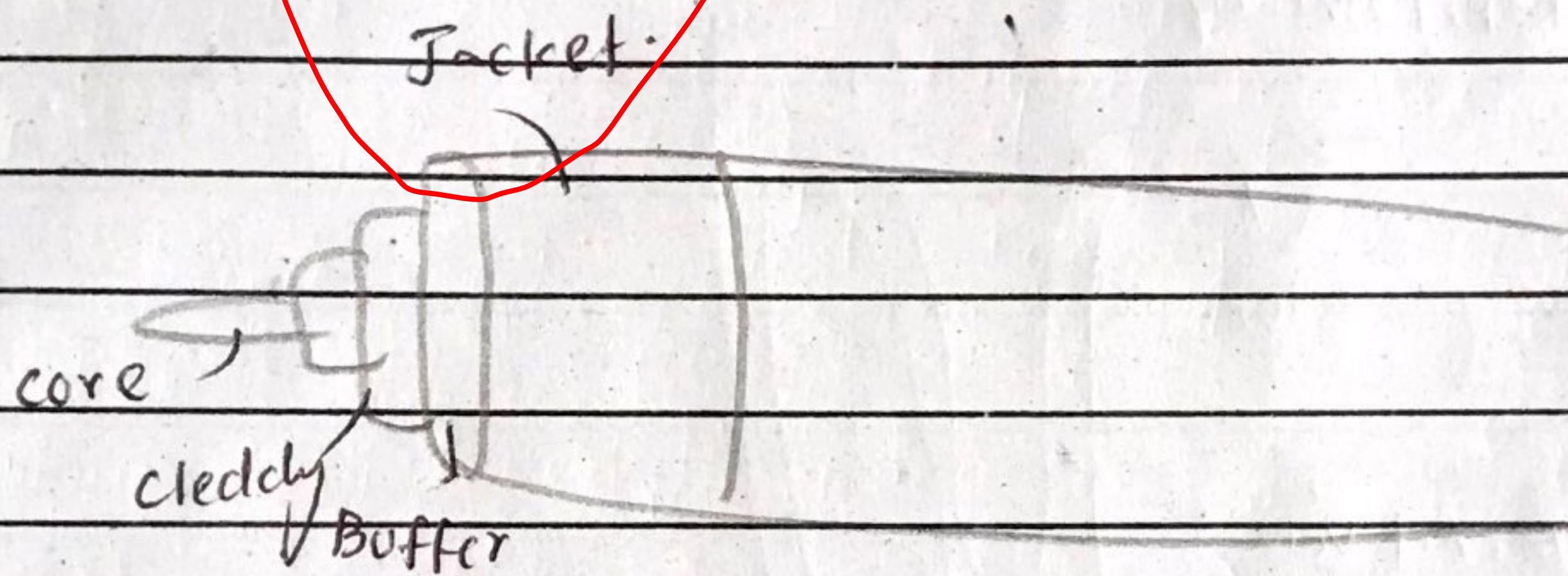
Energy produced in sun due to nuclear fusion. Factor responsible for gravity in sun due to mass and distance. The force of masses gravity depends on directly upon the masses of the two objects and inversely on the square of the distance between them. And the solar wind is the process of energy receiving. Flow of charged particles from the sun which permeates the solar system.

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(B) Optical Fibers

An optical fiber is a hair thin cylindrical fiber of glass or transparent dielectric medium. Fiber used for optical communication are wave guides made of transparent dielectric. Its function is to guide visible and infrared light over long distance. Its shape is like:



(C) Distinguish water soluble and fat soluble vitamins by giving brief account of all the vitamins.

Fat soluble vitamins get absorbed by fats and travel through the bloodstream while water soluble vitamins dissolve in water and get absorbed by tissue immediately.

▷ Vitamin C is water soluble vitamin.

▷ Except for A, D, E, and K all other vitamins are water soluble vitamins.

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(D) Working of Kidney in Human physiology
Our kidney is made up of about a million filtering units called nephrons. Each nephron includes a filter called the glomerulus and a tubule. The nephrons work through a two step process: the glomerulus filters your blood and the tubule returns needed substances to your blood and removes wastes.

Kidney Artery

Glomerulus

Kidney Vein

Tubule

Each nephron has glomerulus to filter your blood and tubule that returns needed substances to your blood pulls out additional wastes. Wastes and extra water become urine.

Q:5

SKIPPED

Due to

shortage of

Time

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Q NO: 06

Ans:

(A) The value of machine ----- Years ago -
Solution.

Data:

Rate of every year = 10%

3 years ago = 8748

Present value = 8748

Form-

$$\text{Final price} = \text{initial price} \left(1 + \frac{\text{rate}}{100}\right)^{\text{time}}$$

$$8748 = x \left(1 + \frac{10}{100}\right)^3$$

$$= x \left(\frac{90}{100}\right)^3 = 8748$$

$$= x \times \frac{9}{10} \times \frac{9}{10} \times \frac{9}{10} = 8748$$

$$x = 8748 \times \frac{10}{9} \times \frac{10}{9} \times \frac{10}{9}$$

$$x = 12000$$

Thus the initial price of machine is
Rs : 12000 .

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(3) A father: - - -

Solution:

Father age = 4 times age of Daughter
5 years later — 3 times of Daughter
after 5 years more ?

Let's age of Daughter is n and father age be $4n$

$$4n + 5 = 3(n + 5)$$

So n is 10

Hence present age of father is 40 and Daughter is 10.

So after 5 years

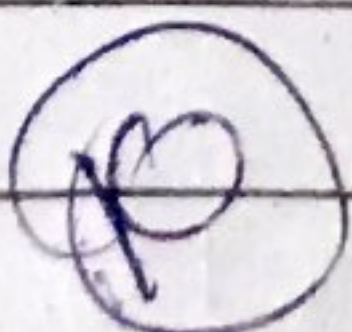
$$5 + 5 = 10 \text{ years}$$

Daughter will be 20 years
and father will be 50 years.

Hence father would be $\frac{50}{20} = 2.5$

2.5 times of his daughter.

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(c) Volume sphere with diameter of 12 cm.
solution

$$V = \frac{4}{3} \pi r^3 \text{ formula}$$

Diameter is 2 x the radius.

$$\text{radius} = \frac{12 \text{ cm}}{2} = 6 \text{ cm.}$$

Putty the value in formula.

$$V = \frac{4}{3} \pi (6)^3 = 288 \pi \text{ cm}^3$$

(d)

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Q No: 7

Ans.

(A)

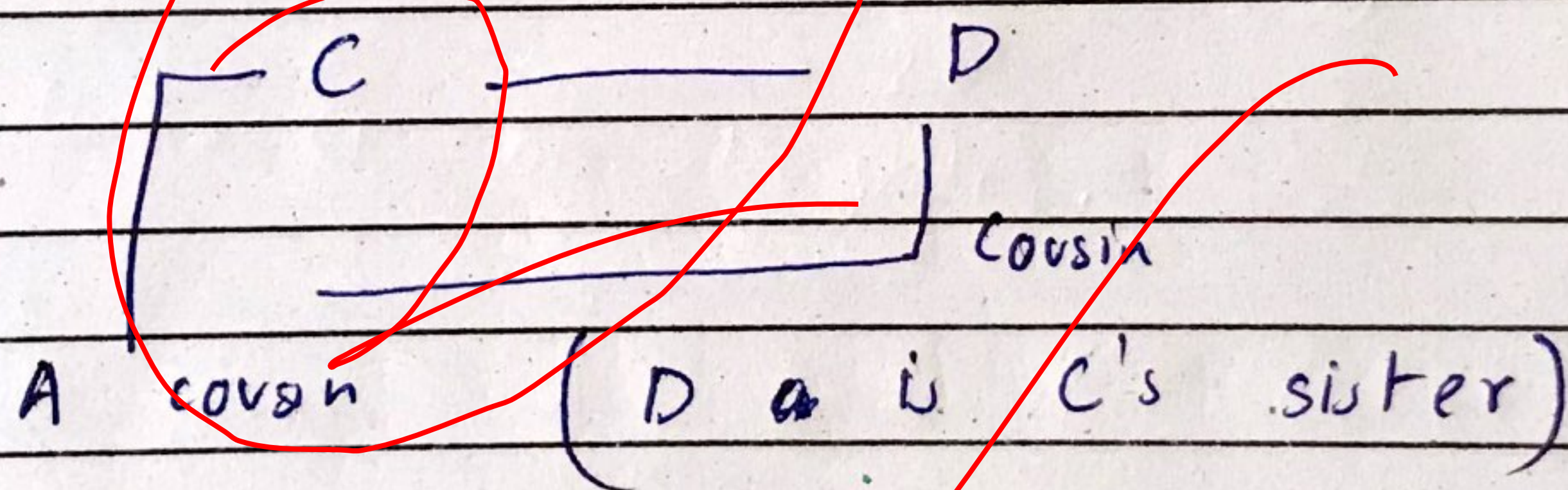
Average 7 consecutive number 20
17, 18, 19, 20, 21, 22, 23

Median number

Hence 20 is the largest number.

(B)

A told C — his father nephew
D is cousin A but not brother of C
relationship between C and D?



D is the sister of C.

(C)

7, 12, 19, 28, 39, ...

solution.

5, 7, 9, 13

The term next to 39 + 13 will be
52.

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(D) A sum of money is to be distributed among A, B, C, D in the proportion 5:2:4:3

Let the A, B, C, D
Rs. $5x, 2x, 4x, 3x$

Then: $4x - 3x = 1000$

$x = 100$

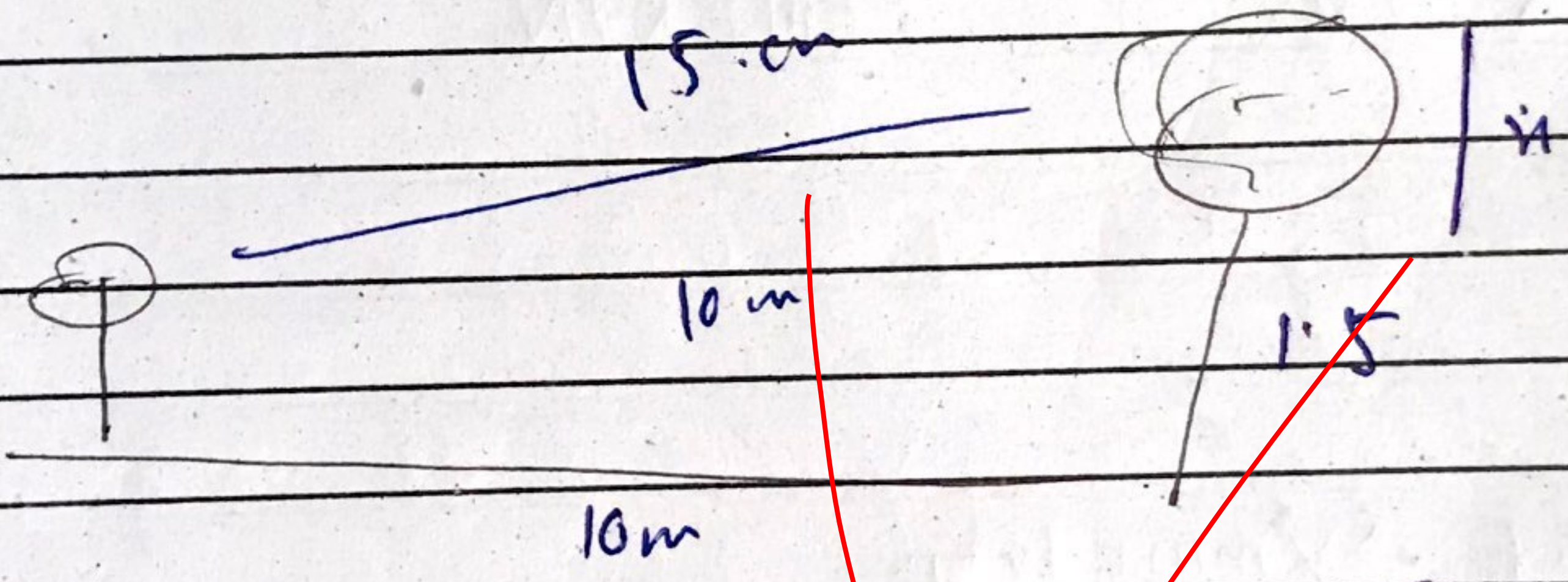
B's share = $2x$

So $(2x \times 1000)$

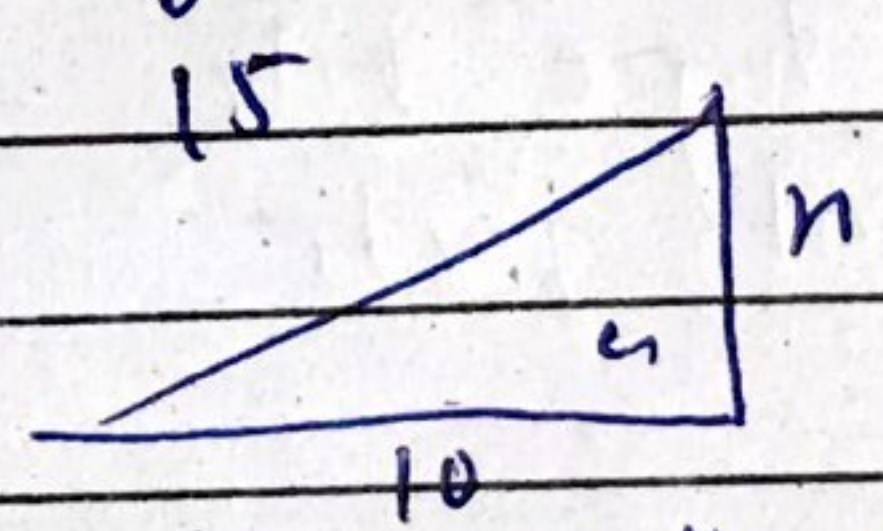
= 2000

Rs. 2000 will be B's share.

Q No: 8
An



Height of tree = $1.5 + h$ — (1)



By using Pythagoras theorem

$15 = \sqrt{(10)^2 + (h)^2}$

$15^2 = 10^2 + h^2$

$225 = 100 + h^2$

$h = 225 - 100$

$h^2 = 125$

$\sqrt{h} = \sqrt{125}$

$h = 5\sqrt{5}$

Put in (1)

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$$\begin{aligned} \text{Height of tree} &= 1.5 + 5\sqrt{5} \\ &= \frac{3}{2} + 5\sqrt{5} \end{aligned}$$

$$\text{Height of tree} = \frac{3 + 5\sqrt{5}}{2}$$

$$\text{or } 12.68$$

(B)

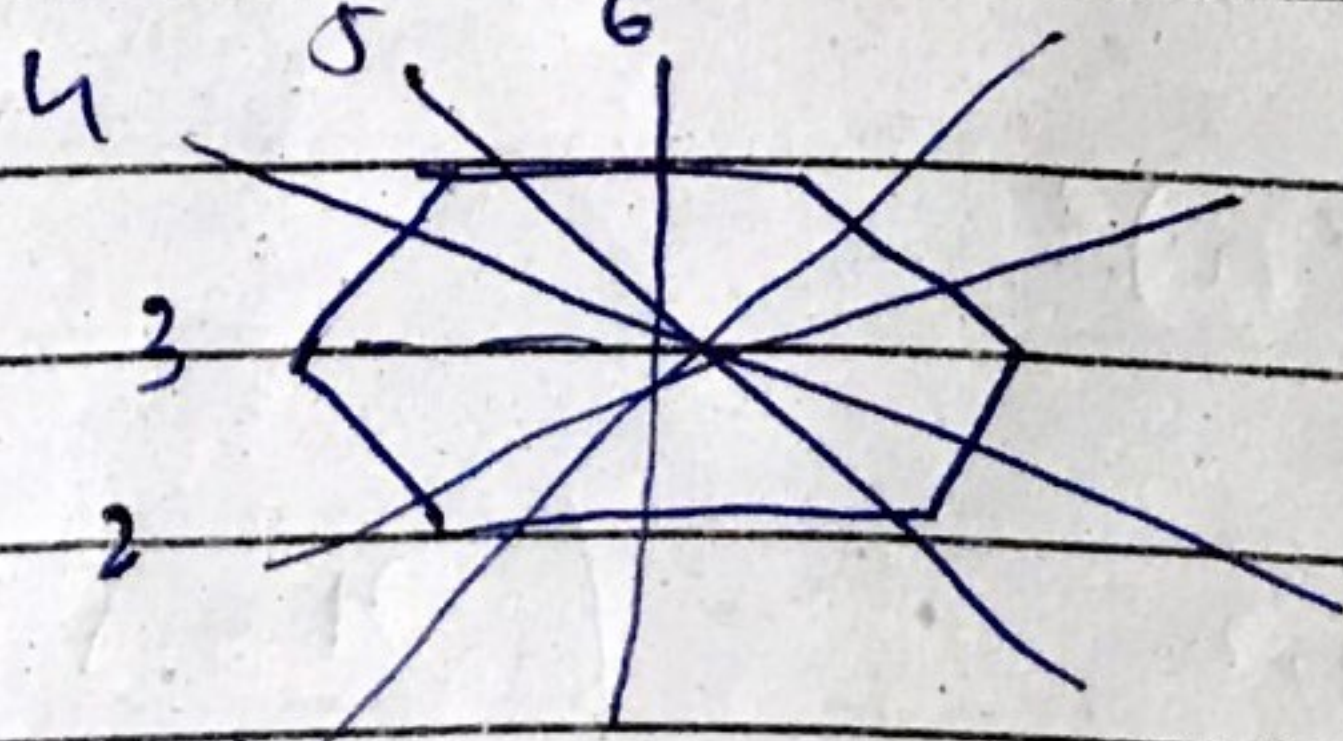
J words	correct word
LNU FEF	ENGUFI
CKANS	SNACK
CIREFE	FIERCE
EERANMOGPT	POMEGRANATE
MNIKPPU	PUMPKIN

(C)

Line of Symmetry.

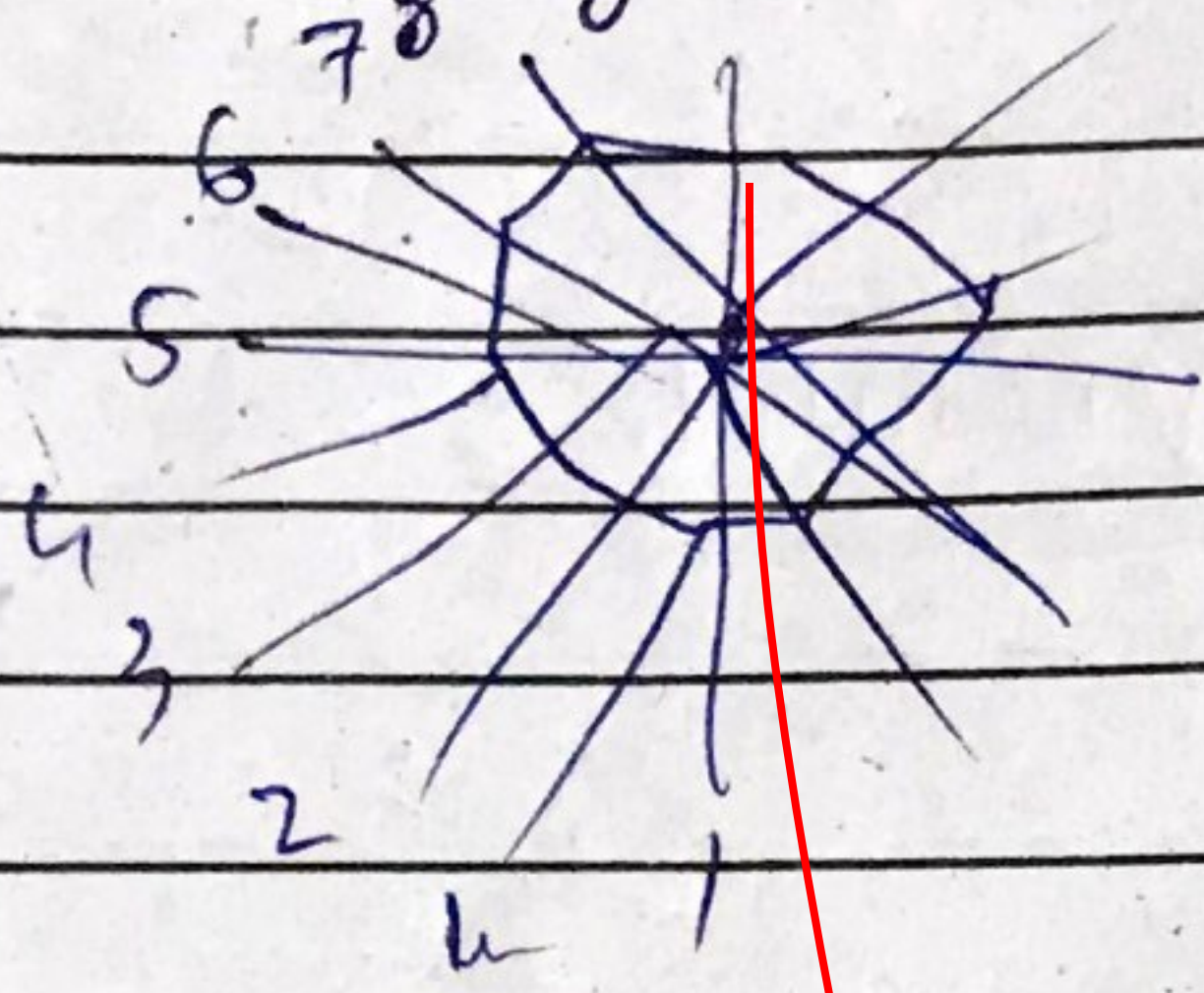
It is a line that divides a shape into two equal and symmetrical parts

Regular heagon



It has 6 lines of symmetry

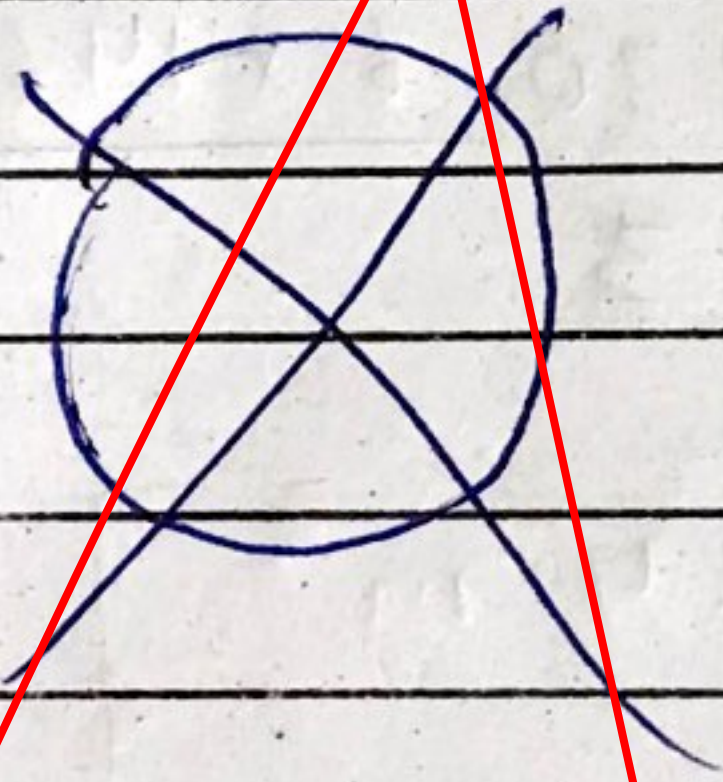
Regular Octagon



It have 8 lines of symmetry

Circle

Every line passing through circle is a line of symmetry so, it have infinite number of lines



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(D)

Solution

Volume of Pyramid:

$$V = \frac{Lwh}{3}$$

Given that

$$h = 146.6 \text{ m}$$

$$l = 230.6 \text{ m}$$

Egyptian Pyramid has a square base

$$L = w$$

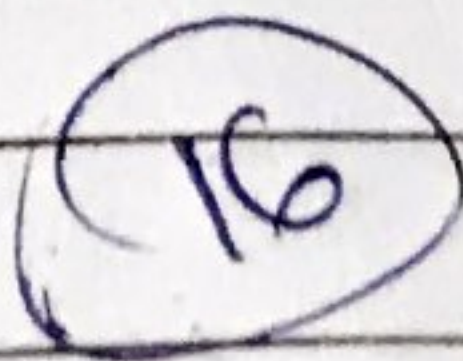
$$w = 230.6 \text{ m}$$

$$V = \frac{230.6 \times 230.6 \times 146.6}{3}$$

$$V = 2598551.4 \text{ m}^3$$

Volume of pyramid of Egypt

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