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GSA PAPER
PART-II (SECTION-A)

QNO#3

Ans. (9)

Proteins:

Proteins are the source of energy which are essential to improve immune system / immunity. These are essential for healing - respiratory - tissue building - muscles.

Sources:

There are various sources of protein including milk, Pulses, Fish, Meat, and so on.

Deficiency and Excess of Proteins:

Due to the deficiency of proteins, muscular weakness, weakness of immune system and weakness of respiratory. However, on the other hand its excess can enhance toxicity and heart related problems.

Carbohydrates:

Carbohydrates are the main source of energy that

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is required to an individual for proper working of human brain. It is essential for mentally performance.

Sources:

Wheat, Oats, Barley and milk are essential sources of Carbohydrates.

Digestion of Proteins:

Mouth → Stomach (Enzymes)
No digestion

Small Intestine → Absorption
(Broken into amino acids)

Digestion of Carbohydrates:

Mouth → Stomach
(Salivary amylase)

Small Intestine → Absorption
(into simple sugar)

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(b)

Atmospheric Pressure:

Atmospheric pressure is the force exerted by air on the surface of earth is called as atmospheric pressure.

Key Points:

- **Measurement Unit:**
  The unit in which atmospheric pressure is used known as Pascal (Pa).

- Barometer is used for measuring atmospheric pressure.

- **Causes:**
  Air molecules are pulled towards the Earth by gravity, creating pressure. The pressure decreases with the increasing of altitude because the air becomes less dense.

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Humidity:

Humidity is the amount of water vapors present in the air. It plays a significant role in the weather and pattern.

Types of Humidity:

i) Absolute Humidity:

The actual amount of water vapors in a given volume of air.

ii) Relative Humidity:

The percentage of water vapor in the air compared to the maximum amount the air can hold at a specific temperature.

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d. (d)

RADAR:

RADAR is a system which uses radio waves to detect and determine the distance, speed, and location of objects. It is widely used in aviation, weather forecasting, and defense system.

Working Principles of RADAR

i- Transmission:

The transmitter emits radio waves in a specific direction through the antena.

ii- Reflection:

When these waves hit an object, they bounce back (reflect) to the RADAR system.

iii- Reception:

The antena receives the reflected waves and sends them to the receiver.

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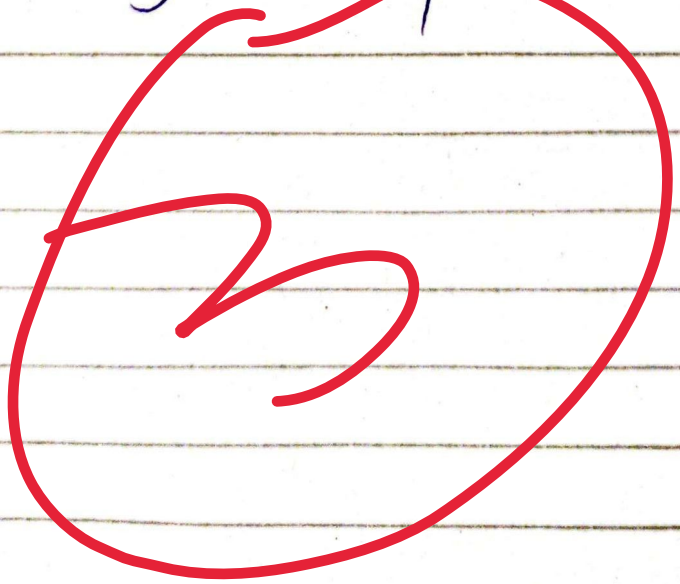
iv- **Processing:** The processor calculates the distance, speed, and position of the object based on:

Time delay: The time taken for the waves to return.

Frequency shift: Changes in frequency determine the object's speed.



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QNO# 4

Ans:

(a)

Solar System:

The solar system is a collection of celestial bodies bound by gravity, with the Sun at its center. It consists of planets, moons, and smaller objects like asteroids and comets.

Main Components of the Solar System:

i) Sun:

Sun is the primary source of heat and energy that produces light for the solar system. It is a massive, glowing star made of hydrogen and helium.

ii) Planets:

There are various planets in a solar system like Mercury, Venus, Earths, Neptune and so on.

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iii) Moons:

Moons are the neutral satellites orbiting planets.
eg:- Earth's moon, Saturn's Titan.

iv) Asteroids:

Asteroids are the rocky objects primarily in the Asteroid Belt.

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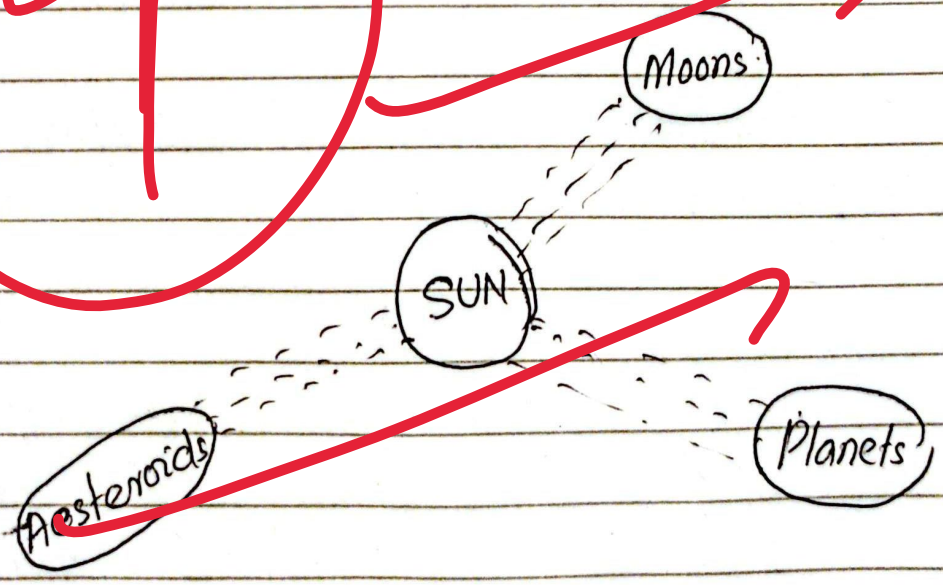

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(c)

RAM : (Random Access Memory.)
A type of computer memory that is fast, temporary, and volatile. It is is used to store data and instructions that the CPU needs while performing tasks.

ROM: (Read-only-Memory)
A type of permanent, non-volatile memory which contains data and instructions that do not change.

Nible:

Nible is a unit of digital information equal to 4 bits.
Half of a byte. (1 byte = 8 bits).

USB:

A standard interface for connecting devices to a computer. It is used for power supply and data transfer.

(10)

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Mother board:

The main circuit board of a computer that connects the CPU, RAM, storage, and other hardware components. It acts as the central hub for communication between all parts of a computer.

Make headings
Keep length of all questions equal
Draw flow charts and diagrams and properly label it.
Use scientific terminologies
Use scientific examples

Follow appropriate structure for answer according to the question : ROM and RAM
Well attempted maths

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(d)

COP29:

The COP29 on the increasing risks of climate change was held in Baku, Azerbaijan that aim to limit temperature rise upto 1.5°C. The main purpose of the meeting was to mitigate climate change effects and financial assistance.

Objectives of COP29:

The main objectives of the COP29 were to mitigate climate change disasters and to assist financially to those countries which are severely targeted by climate effects. However, the role in the contribution in greenhouse gases emission of these countries is immeasureble. Therefore, the COP29 assigned the responsibility to the developed nations to assist these

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countries so that they can move their energy sources from non-renewable energy to renewable energy.

Outcomes:

The meeting was successfully conducted and the aid was increased by developed nations and this can be beneficial for the weaker countries to move their sources towards renewable energy sources which can limit the temperature rise upto 1.5°C.

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SECTION-B

Q NO#7

Ans.

(a)

Data:

- Average of 7 consecutive no = 20.

$$\frac{x+(x+1)+(x+2)+(x+3)+(x+4)+(x+5)+(x+6)}{7}$$

- Find the largest no: ?

Sol:.

Let the 7 consecutive no: are.

$$x+(x+1)+(x+2)+(x+3)+(x+4)+(x+5)+(x+6)$$

- Now divide with 7 to take an average:

Now,

$$\frac{x+(x+1)+(x+2)+(x+3)+(x+4)+(x+5)+(x+6)}{7} = 20$$

$$x+x+1+x+2+x+3+x+4+x+5+x+6 = 20\times 7$$

$$7x+21 = 140$$

$$7x = 140-21$$

$$7x = 119$$

$$x = \frac{119}{7}$$

$$\boxed{x = 17}$$

(iv)

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∴ Therefore

$n = 17$

$n+1 = 17+1 \Rightarrow 18$

$n+2 = 17+2 \Rightarrow 19$

$n+3 = 17+3 \Rightarrow 20$

$n+4 = 17+4 \Rightarrow 21$

$n+5 = 17+5 \Rightarrow 22$

$n+6 = 17+6 \Rightarrow 23$

∴ Therefore, the largest number is 23 Ans.

(b)

Data:

A told B that C is his father's nephew: means

- A and C are cousins.

D is A's cousin but not the brother of C. means:

A —Cousin→ C

D —Cousin→ A

C —not brother→ D

Therefore, the relation between C and D is brother and Sister.

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(c) Find missing numbers:

i- 4, 18, ____, 100, 180, 294, 448

4

18 = 18 − 4 = 14

50 = 50 − 18 = 32

100 = 100 − 50 = 50.

180 = 180 − 100 = 80.

294 = 294 − 180 = 114

448 = 448 − 294 = 154.

Therefore, the missing number is 50. Ans.

ii- 1, 2, 10, 37, 101, ____

1 = ~~2nd~~ ~~=0~~

2 = 2 − 1 = 1

10 = 10 − 2 = 8

37 = 37 − 10 = 27

101 = 101 − 37 = 64

226. ?

Now the differences are

1, 8, 27, 64, ____ ,

the differences are in cube ~~nota~~.

$1^3 = 1$

$2^3 = 8$

$3^3 = 27$

$4^3 = 64$

∴ Therefore $5^3 = 125$ is the missing no: is 226.

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iii) 11, 17, 39, 85, ——

11 =
17 = 17 − 11 = 6
39 = 39 − 17 = 22
85 = 85 − 39 = 46.
161 = 161 − 85 = 76
Differences are:
6, 22, 46, ——
14 22 30

∴ 46 + 30 = 76

∴ Therefore, the missing no: is 161. Ans.

iv) 13, 24, 46, 90, 178, ——

13 =
24 = 24 − 13 = 11
46 = 46 − 24 = 22
90 = 90 − 46 = 44
178 = 178 − 90 = 88
354 = 354 − 178 = 176

Now the differences are:

11, 22, 44, 88, 176

Each difference is doubled
Therefore the missing number is 354 Ans.

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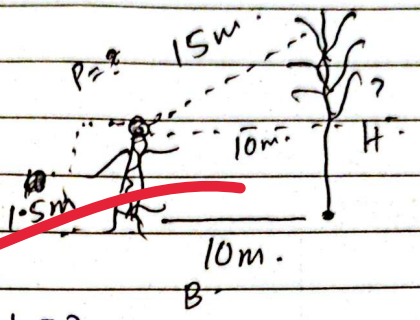
Q No # 08

Ans.

(a)

Data:

B = 10m.
P = 15m.
H = ?



Sol:-

B = 10m. P = 15, H = ?

Use Pythagoras theoreum.

$\therefore H^2 = B^2 + P^2$

$H^2 = (10)^2 + (15)^2$

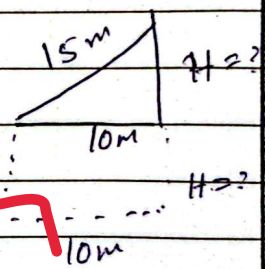
$H^2 = 100 + 225$

$H^2 = 325$

$H = \sqrt{325}$

$H = 18.03$

$H = 18$



Now add the distance of feet to eyes. w.to Height -

$18 + 1.5 = 19.5$ m.

$\therefore$ Therefore the height of the tree is 19.5 m Ans.

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(b)

SONCCUOISIEN

Conscientious

EIVENPRRAOST

Overpersistence

UORSIULDC

Curdles

UNSPRESE

Presence

NMILAOPC

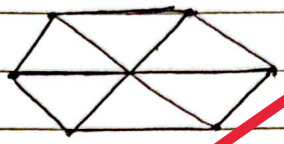
Compliant

Date: Day: M T W T F S

(c)

Hexagon:

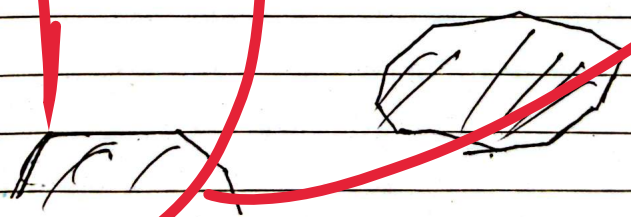
A figure having six angles and sides.

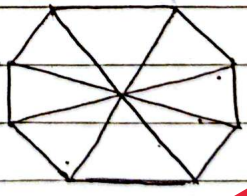


3- Symmetry lines

Octagon:

Having eight angles and sides

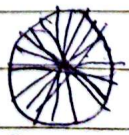




5 symmetry lines

Circle:

360°



Infinity no: of symmetry lines

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(a)

Data:

Base of Pyramid.

L = 7cm.

W = 5cm.

h = 10cm.

V = ?

Sol:-

$$V = \frac{1}{3} \times A \times h.$$

$\therefore A = L \times W.$

$A = 7 \times 5.$

$A = 35\ cm.$

$$V = \frac{1}{3} \times A \times h.$$

$$V = \frac{1}{3} \times 35 \times 10.$$

$$V = \frac{350}{3}$$

$$V = 116.67\ cm^3.$$

Ans.