

SECTION - B.

Q No 07: Part - A

Given:

Average of 7 Consecutive numbers = 20

Required:

Largest Number = ?

Calculation:

As Average is "20" Let Consecutive numbers be:

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

Average of these numbers is 20

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

7

$$7x + 21 = 20 \times 7$$

$$7x + 21 = 140$$

$$7x = 140 - 21$$

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

$$x = 17$$

Largest number is $x+6$

Put $x=17$

$$x+6 = 17+6$$

$$= 23$$

Largest Number is 23

Q 07 Part B.

Solution

C is the father's nephew of A.

D is the cousin of A.

D is not the brother of C.

Relation of D and C:

D is the sister of C.

Q 07: Part "c"

$$294 - 180 = 114$$

Missing Number:

$$180 - 100 = 80$$

i) 4, 18, 46, 100, 180, 294

$$114 - 80 = 34$$

"Difference is increasing by '6'"

$$154 - 114 = 40$$

46 lying at a difference of 28 from 18.

$$34 - 6 = 28$$

(ii) 1, 2, 10, 37, 101, 226

$$2 - 1 = 1 = 1^3$$

$$10 - 2 = 8 = 2^3$$

$$37 - 10 = 27 = 3^3$$

$$101 - 37 = 64 = 4^3$$

-- 101 = ? = It would be 5^3

$5^3 = 5 \times 5 \times 5 = 125$ - So the missing digit is

lying at a difference of 125 from 101. Hence $101 + 125 = 226$ would be the missing number.

(iii) 11, 17, 39, 85, 163

$$17 - 11 = 6$$

Similarly $22 - 6 = 16$

$$39 - 17 = 22$$

$$46 - 22 = 24$$

$$85 - 39 = 46$$

difference increasing by 8.

So the next number would at

$32 + 46 = 78$ difference - It means that next

number would be $85 + 78 = 163$

(iv) 13, 24, 46, 90, 178, 254

$$24 - 13 = 11$$

$$46 - 24 = 22$$

$$90 - 46 = 44$$

$$178 - 90 = 88$$

$$? - 178 = 176$$

Next number be at a difference of 176 from 178.

So, $178 + 176 = 254$ is the missing number.

(v) 4, 36, 144, 400, 900, 1764

$$1764 - 900 = 864$$

$$\text{Also } 4 = 2^2$$

$$900 - 400 = 500$$

$$- = ?$$

$$400 - 144 = 256$$

$$144 = 12^2$$

$$144 - \quad = ?$$

$$400 = 20^2$$

$$900 = 30^2$$

As the different of the squares is increasing by 8, 10, 12 respectively. So the number before "144" would surely be the square of "6" : $6^2 = 36$

Missing number is 36.

Discipline/Program: _____

Date: _____ Number of Cont./Sheet: _____

Q7 : Part (D)

Given: Share of $A:B = 1:2$, $B:C = 2:3$, $C:D = 3:4$

Required: Share of B in Rupees, if the difference b/w A and D is 2240.

Calculation:

Let in $A:B = 1:2$, A share be "x" and B is "2x"

In $B:C = 2:3$, B's share is "2x" C share will be =

$$\frac{2x \times 2}{2} \Rightarrow C \text{ share} = \frac{4x}{3}$$

Similarly $C:D = 3:4$, D share will be = $\frac{4x}{3} \times \frac{4}{3}$

$$D \text{ share} = \frac{16x}{9}$$

Now, Difference b/w A and D share is 2240

$A - D = 2240$ Put values

$$x - \frac{16x}{9} = 2240$$

$$\frac{9x - 16x}{9} = 2240$$

9

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$$\frac{-7x}{9} = 2240$$

$$-7x = 2240 \times 9$$

$$x = \frac{20160}{7}$$

∴ Amount can't be -ve.

$x = 2880$, A's share.

$$\begin{aligned} \text{B share} &= 2x \\ &= 2 \times 2880 \\ &= 5760 \text{ Rs} \end{aligned}$$

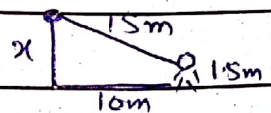
Q No 8 Part (A)

Given: Distance b/w Ali and Tree = 10m

Distance from his eyes to top of tree = 15m

Distance from eyes to feet = 1.5m.

Required: Height of Tree = ?



Calculation:

$$\text{As } (\text{Hyp})^2 = (\text{Base})^2 + (\text{Perp})^2$$

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

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

$$15 - 10 = x$$

$$x = 5\text{m}$$

Now the actual height will be

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$$h = x + 1.5$$

$$h = 5 + 1.5$$

$$h = 6.5 \text{ m}$$

Q No 8 Part (B)

(i) SONCCUOISIENT \rightarrow Conscientious

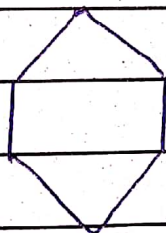
(ii) EIVENPRAOST \rightarrow Preservation

(iii) UORSIULDC \rightarrow Circulous

(iv) UNSPRESE \rightarrow Superness

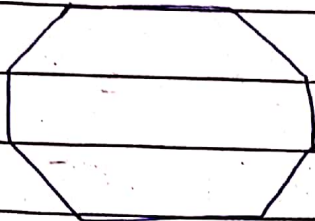
(v) NMILADPC \rightarrow Complain

Q No 8 Part (C)



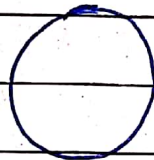
Hexagon

Hexagon has Six Lines of Symmetry, Passes through mid points of opposite vertices.



Octagon.

Octagon has 8 lines of symmetry passes through opposite vertices / mid points of opposite sides.



Circle

• A circle has infinite lines of symmetry. Any line pass through the center, divide the circle to two halves.

Q No 8 Part D

Given: Length, width, and height of rectangular base of pyramid = 7cm, 5cm, 10cm respectively.

Required:

Volume $V = ?$

Calculation:

$$\text{Volume of Pyramid } V = \frac{1}{3} (\text{Base Area}) \times \text{Height}$$

$$V = \frac{1}{3} (L \times W) \times H$$

$$\therefore \text{Base Area} = \text{Length}$$

$$V = \frac{1}{3} (7 \times 5) \times 10$$

$$\times \text{Width}$$

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

$$V = \frac{350}{3} \Rightarrow \boxed{V = 116.67 \text{ cm}^3} \text{ Volume of Pyramid}$$

Q No 2 Part (A)

Ingenous Rocks:

Ingenous Rocks are those which forms from the cooling of molten rock -

The magma erupted from the earth is in molten state and exposed to the air and atmosphere. Upon cooling this molten magma converted to solid form which is known as Ingenous Rocks.

Classification:

Ingenous rock has been classified into two categories.

(i) ~~Int~~ Intrusive Rock

(ii) Extrusive Rock

DO NOT WRITE ON THIS PORTION

The latter forms at the inner side of earth whereas the former formed on the outer surface of the earth.

Example:

Granite: Intrusive

Basalt: Extrusive.

"Metamorphic Rock"

Metamorphic rocks are formed from the pre-existing rocks i.e. igneous, sedimentary rocks.

When the lava or magma stagnated and upon high pressure and temperature, this is converted to another form of rock which is known as "Metamorphic Rock".

→ Chemical conditions are also important for the formation of such rocks.

Example:

Marble, slate.

Q No 02: Part (B)

Smog:

Smog is a type of air pollution which is formed when smoke and other pollutants combine with fog in atmosphere.

Smoke + Fog = Smog

- Smog mostly happens in urban area or in the cities where industrial activity and vehicle emissions are carried out.

- In Pakistan, Lahore, Peshawar, Faisalabad and Karachi are the most vulnerable cities to smog.

Classification of smog:

(a) London smog / classical smog

- The smog caused by burning of coal, releasing Sulphur dioxide " SO_2 ".

- It is common in cooler and humid climate.

- When SO_2 mix with fog, resulting in yellowish haze (sometimes grayish).

- For the very first time it had seen in London, the busiest city of England.

(b) Los Angeles smog / Photochemical smog:

- Such smog take place in sunny season and warm climates.
- It is formed due to reaction of Nitrogen oxides "NO_x" when other organic compounds.
- It leads to the formation of "Ozone" (O₃) the pollutant most harmful for human life.
- It results in the formation of a brownish haze.

Q No 2 Part "c"

Importance of Risk Assessment in Disaster Risk Management (DRM):

Risk assessment is a critical process in Disaster risk management because it helps in identifying and evaluation of potential risk that may affect a community or a region. The importance of Risk Assessment in Disaster Risk management (DRM) also includes:

(i) Identifying the vulnerabilities:

It helps in identifying the area, people, and infrastructure that are most vulnerable to different type of disasters.

(ii) Planning and Preparedness:

Risk assessment facilitates the development of disaster preparedness plans, evacuation strategies, and mitigation measures.

(iii) Resources Allocation:

It ensures the allocation of resources to the areas at higher risks to minimize the impacts of potential disaster.

(iv) Decision Making:

Risk assessment in DRM helps in carrying the decision making process. It provide data to the decision makers regarding the actions taken affected areas -

⑤ Public awareness:

It helps in informing the citizen through different mediums to be prepared for emergencies. They also educate the students regarding the probable disasters and efforts to be adopted to mitigate these disasters.

⑦ No2 Part ①

"Short Sightedness"

- This is also called Myopia.
- It is a condition where a person can see objects clearly up close but has difficulty seeing objects at a distance.
- Causes

It is caused by the elongation of eyeball or excessive curvature on Cornea making light rays focus in front of the retina.

Correction / Treatment:

- It can be corrected by using the Concave lenses.

"Farsightedness"

- It is also called Hyperopia.
- It is a condition when a person can see far objects or objects at a distance clearly, but, face difficulties in seeing close object.

"Cause"

- It is caused by short eye ball or insufficient curvaduse of the cornea, making light rays focus behind the retina.

"Correction"

- It can be corrected by using the glasses with convex lenses.

Q No 04

Part (c)

ROM:

- Read only memory.
- Volatile and small.
- Can't be accessed everytime.
- ^{once} Lost, ~~and~~ is not retrivable.
- Example is cache memory.

RAM:

- Random access memory.

- Non Volatile and large in size.
- Accessible anytime easily.
- If lost, can be restored.
- Hard ^{Disc} Drive (HDD).

"Nibble"

- Data from the server has been received in form of bits.
- When ~~8~~ Eights Combines, it is called a byte.
- Whereas, the packet of four bits of data is called Nibble.

"USB"

- Universal Serial Bus is an output device that is used for the transfer of data from one Computer / system to another.
- It is an offline device and does not need any internet connection.

"Mother Board"

- Mother board is the part of computer that contain the most important parts of the system.
- It acts as the brain of the computer.
- Any small fault in mother board can affect the overall performance of the system.