

(Q: no 6) (A Part)

Ans:-

Ahsan's Mother.

(B PART)

$$12 \text{ km/hr} = 12 \times 1000 / 60 = 200 \text{ m/min}$$

Distance covered in 8 minutes

$$200 \times 8 = 1600$$

$$P = 2(\text{Length} + \text{Breadth})$$

$$P = 2(L + B)$$

$$2(L + B) = 1600$$

$$(L + B) = 800$$

$$3x + 2x = 800$$

$$5x = 800$$

$$x = \frac{800}{5} = 160 \text{ Ans:-}$$

So

$$\text{Length} = 3 \times 160 = 480$$

$$\text{Breadth} = 2 \times 160 = 320$$

$$\text{Area} = L \times B = 480 \times 320$$

$$\text{Area} = 153600 \text{ sq.m}$$

$$10(11x+2)(x+1) = 72$$

$$10x + (x+2) = 11x+2 \text{ (So the number)}$$

$$x + (x+2) = 2x+2 \text{ (Sum of digits)}$$

$$(11x+2)(2x+2) = 144 \text{ (According to the question)}$$

$$(11x+2)(x+1) = 72$$

$$\text{For } x = 2$$

$$(11 \times 2 + 2)(2 + 1)$$

$$= 24 \times 3 = 72$$

$$\text{Ten's digit} = 2$$

$$\text{Unit's digit} = 4$$

The required number is 24 Ans.

(PART D)

$$\text{LCM}(2x, 3x) = 6x$$

$$6x = 48$$

$$x = 8$$

$$2x = 16 \text{ and } 3x = 24$$

$$16 + 24 = 40$$

Q:1) (PART A)

$$40\% \text{ of } x = \frac{2}{3} \text{ of } y$$

$$\frac{40}{100} x = \frac{2}{3} y$$

$$\frac{2x}{5} = \frac{2y}{3}$$

$$\frac{1}{5} = \frac{1}{3}$$

$$3x = 5y$$

$$5:3 \text{ Ans.}$$

PART B

$$\text{C.P of 17 balls} = 17x$$

$$\text{Selling Price SP of 17 balls} = \text{Rs } 720$$

$$\text{Loss} = \text{CP of 5 balls} = 5x$$

$$\text{Loss} = \text{CP} - \text{SP}$$

$$17x - 720 = 5x$$

$$17x - 5x = 720$$

$$12x = 720$$

$$x = \frac{720}{120} = 60 \text{ Ans:-}$$

(PART C)

$$\text{Son's age} = x + 2$$

$$\text{Father's age} = x + 24 + 2 = x + 26$$

$$x + 26 = 2(x + 2)$$

$$x + 26 = 2x + 4$$

$$26 - 4 = 2x - x$$

$$22 = x$$

$$\text{Father's age} = 22 + 24 = 46 \text{ years.}$$

(PART D)

$$\frac{32}{6} = \frac{16}{3} \text{ pages/hour}$$

Rashid: 32 pages in 6 hours — rate =

Kamran: 40 pages in 5 hours → rate

$$\frac{40}{5} = 8 \text{ pages/hour}$$

$$\text{Combined rate} = \frac{16}{3} + 8 = \frac{16}{3} + \frac{24}{3} = \frac{40}{3} \text{ pages/hour}$$

Step 3: Time to type 110 pages

$$\text{Time} = \frac{\text{Total pages}}{\text{Combined rate}} = \frac{110}{40/3}$$

$$\frac{110 \times 3}{40} = \frac{330}{40} = 8.25 \text{ hours} \text{ Ans.}$$

Q:8 A

Step 1: List the clues:-

1. A is to the right of B $\rightarrow B \dots A$
2. E is left of C and right of A ($A \dots E \dots C$)
3. B is to the right of D $\rightarrow (D \dots B)$

Clue 3: $D \dots B$

So B is not first. D is left of B

Clue 1: $B \dots A$

So sequence so far $D \dots B \dots A$

Clue 2: $A \dots E \dots C$

So sequence becomes: $D \dots B \dots A \dots E \dots C$

Middle house (3rd position) = A.

Step 1: Start from the origin

Start point O

Step 1: Run 4 km north $\rightarrow$ Point A

Step 2: Turn left and run 5 km
Facing north, turning left $\rightarrow$ facing west
Run 5 km $\rightarrow$ Point B

Position 4 km north, 5 km west of O

~~Step 3: Turn left and run 5 km
Facing west, turn turning left $\rightarrow$ facing west
Run 5 km~~

Step 3: Turn left and run 5km
Facing west, turning left $\rightarrow$ facing south.
Run 5km $\rightarrow$ Point C

Position (4-5) = -1km north (i.e., 1km south),
5km west.

So 1km south, 5 km west of O

Step: 4 Turn left and run 6km
Facing south, turning left $\rightarrow$ Facing east
Run 6km - Point D

Position:

East movement: 6km from 5km west $\rightarrow$ net 1km
east $(6-5)=1$

North / South: still 1km south.

1km south, 1km east of O

Step: 5 Turn left and run 1km
Facing east, turning left - facing north
Run 1km - Point E

Position:

North movement 1km south + 1km north = 0km

On same horizontal line as O

Finishing point: 1km east of starting point O

1. Shirt

2. Coat

3. Blouse

4. Skirt

5. Sweater

(PART D)

- The figure contains 16 triangles
Smallest triangles 8 (individual small triangles)
- Larger triangles (formed by combining 2
Small triangles): 4
- Even larger triangles (formed by combining 4
Small triangles): 4:

Global Warming can be reversed through a combination of environmental, technological, and behavioral measures.

1. Reducing Greenhouse Gas Emissions:
Shift to ~~renew~~ renewable energy sources like solar, wind, and hydro, and promote energy efficiency in industries, transport, and households.
2. Afforestation and Reforestation: Planting trees and restoring degraded forests to absorb carbon dioxide from the atmosphere.
3. Sustainable Agriculture and Waste Management
Promote organic farming, reduce methane emissions from livestock, and manage waste to minimize landfill gases.
4. Carbon Capture Technologies: Use modern technologies to capture and store CO_2 from power plants and industrial sources.

5. Global Cooperation and Policy Measures:
Enforce international agreements like Paris Agreements
Accord and promote green practices at individual
Community, and government levels.

Conclusion: Reversing global warming requires
collective action combining policy, technology, and
responsible human behavior.

(PART B)

Ceramics are inorganic non-metallic materials
made by the action of heat and subsequent
cooling. They are usually hard, brittle, and
resistant to heat and chemical attack. Common
examples include clay, porcelain, glass, and
bricks.

Properties of Ceramics:

1. Hard and brittle break easily under stress.
2. High melting point can withstand very high temperatures.
3. Poor conductors electrical and thermal insulators.
4. Chemical stability resistant to corrosion and chemical reactions.
5. Low ductility cannot be easily stretched or deformed.

Applications of Ceramics

1. Construction: brick, tiles, and cement.
2. Household items - Porcelain cups, plates, and glassware.
3. Industrial uses: insulators, refractory materials, and cutting tools.
4. Ceramics capacitors and substrates.
5. Medical field: Dental implants and prosthetics.

1. Optical fibers

Working:

Optical fibers are thin strands of glass or plastic that transmit light signals over long distances using Total internal reflection.

A light signal enters one end of the fiber and reflects repeatedly off the inner walls without escaping, carrying data in the form of pulses of light.

They are used for high-speed communication internet, and cable T.V because they have low signal loss and high bandwidth.

Applications

Internet and telephone communication

Medical endoscopy

Military and aerospace communication.

2. Mobile Phone

Working:

A mobile phone converts sound into electrical signals using a microphone, which are then converted into radio waves and transmitted via a cell tower.

The tower relays the signal to the recipient's phone, where it is ~~conn~~ converted back into sound by the speaker.

Modern phones use digital signals and rely on cellular network, satellites, and base stations for communication.

Applications:

Voice calls and messaging
internet ~~browsing~~ browsing and social media
GPS navigation and online banking.