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PRACTICE PAPER 07 (2023-24)
MENSURATION (ANSWERS)

SUBJECT: MATHEMATICS **MAX. MARKS : 40**

CLASS : VI **DURATION : 1½ hr**

General Instructions:

(i). **All** questions are compulsory.

(ii). This question paper contains 2**0** questions divided into five Sections A, B, C, D and E.

(iii). **Section A** comprises of **6 MCQs** of **1 mark** each. **Section B** comprises of **1 CCT question** of **4 marks** each which contains **4 MCQs**. **Section C** comprises of 3 questions of **2 marks** each. **Section D** comprises of 4 questions of **3 marks** each and **Section E** comprises of 3 questions of **4 marks** each.

SECTION – A

Questions 1 to 6 carry 1 mark each.

1. The area of a rectangle is 650 cm^2 and its breadth is 13 cm. The perimeter of the rectangle is
(a) 63 cm (b) 130 cm (c) 100 cm (d) 126 cm
Ans: (d) 126 cm
We have, Area of the rectangle = 650 cm2 and
Breadth of the rectangle = 13 cm
As, length of the rectangle = Area/Breadth = 650/13 = 50 cm
So, the perimeter of the rectangle = 2 × (length + breadth)
= 2 × (13 + 50) = 2 × 63 = 126 cm

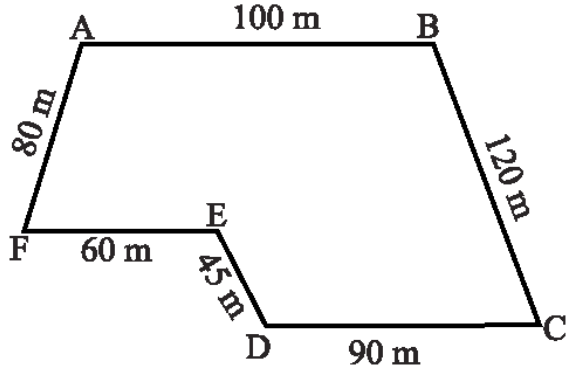
2. The perimeter of a square whose area is 225 m^2 is
(a) 15 m (b) 60 m (c) 225 m (d) 30 m
Ans: (b) 60 m
We have, Area of the square = 225 m^2
As, Area = $(side)^2$ = 225 m^2 = (15^2) ⇒ side = 15m
So, the perimeter of the square = 4 × side = 4 × 15 = 60 m

3. The length and breadth of a rectangle of area A are doubled. The area of the new rectangle is
(a) $2A$ (b) A^2 (c) $4A$ (d) None of these
Ans: (c) $4A$
Let the length and breadth of the given rectangle be l and b, respectively.
We have, $A = lb$ .....(i)
Also, the length of the new rectangle, $l' = 2l$ and
the breadth of the new rectangle, $b' = 2b$
Now, the area of the new rectangle = $l' \times\times b' = (2l) \times\times (2b) = 4lb = 4A$ [Using (i)]

4. The sides of a rectangle are in the ratio 5 : 4. If its perimeter is 72 cm then the length is
(a) 20 cm (b) 30 cm (c) 40 cm (d) none of these
Ans: (c) 40 cm

5. A room is 5m 40cm long and 3m 75cm wide. Find the area of the carpet needed to cover the floor.
(a) 20 m^2 (b) 20.25 m^2 (c) 21 m^2 (d) none of these
Ans: (b) 20.25 m^2

6. The perimeter of the below figure is
(a) 490 m (b) 500 m (c) 495 m (d) none of these



Ans: (c) 495 m

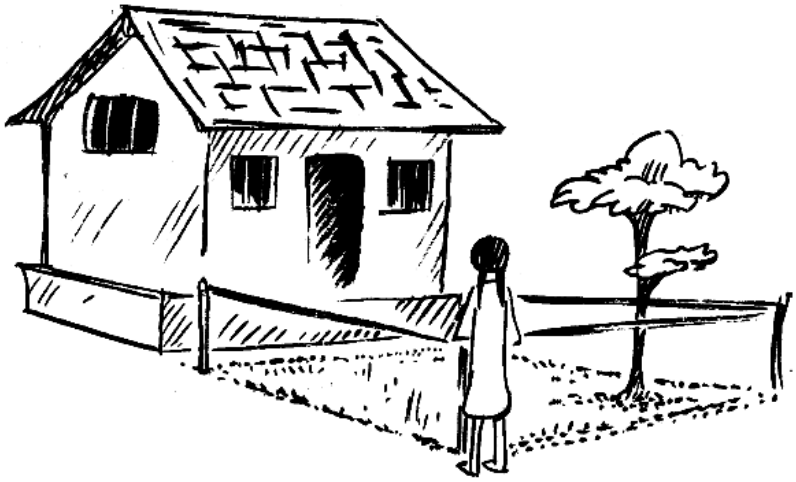
SECTION – B(CCT Questions)

Questions 7 to 10 carry 1 mark each.

CCT Question

Anu wants to fence the garden in front of her house (see below Figure), on three sides with lengths 20 m, 12 m and 12 m.

For fencing she went to shop to purchase wire. She brought a wire which is in the shape of a square of side 10 m. She changed the shape of the wire into a rectangle of length 12 m.



Based on the above, answer the following questions

7. Find the cost of fencing at the rate of Rs 150 per metre.
(a) Rs. 4500 (b) Rs. 6600 (c) Rs. 6000 (d) Rs. 5500
Ans: (b) Rs. 6600
The length of the fence required is the perimeter of the garden (excluding one side) which is equal to 20 m + 12 m + 12 m = 44 m.
Cost of fencing = Rs 150 × 44 = Rs 6,600.

8. What is the Perimeter of the wire?
(a) 20m (b) 30m (c) 50m (d) 40m
Ans: (d) 40m
Side of the square = 10 m
Length of the wire = Perimeter of the square = 4 × side = 4 × 10 m = 40 m

9. What is the breadth of the rectangle she formed?
(a) 8m (b) 4m (c) 5m (d) 6m
Ans: (a) 8m

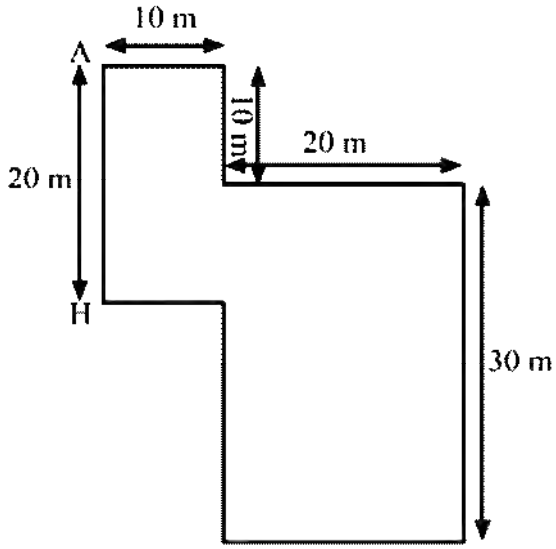
Length of the rectangle, l = 12 m. Let b be the breadth of the rectangle.
Perimeter of rectangle = Length of wire = 40 m
Perimeter of the rectangle = 2 (l + b)
Thus, 40 = 2 (12 + b) ⇒ 12 + b = 20 ⇒ b = 20 − 12 = 8 m
The breadth of the rectangle is 8 m.

10. Find the difference between the Area of the square and the area of the rectangle.
(a) 10m² (b) 4m² (c) 5m² (d) none of these
Ans: (b) 4m²
Area of the square = (side)² = 10 m × 10 m = 100 m²
Area of the rectangle = l × b = 12 m × 8 m = 96 m²
Difference = 100 m² - 96 m² = 4 m²

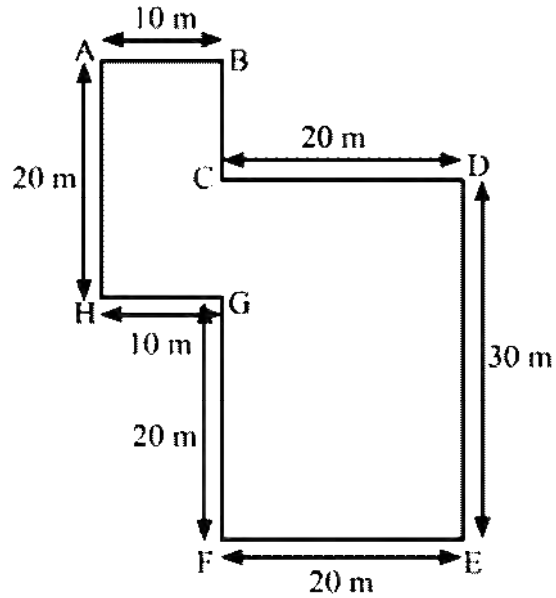
SECTION – C

Questions 11 to 13 carry 2 marks each.

11. Find the perimeter of the following figure:



Ans: Perimeter of the figure = AB + BC + CD + DE + EF + FG + GH + HA
= 10 + 10 + 20 + 30 + 20 + 20 + 10 + 20 = 140 m



12. One side of a square plot is 250 m, find the cost of levelling it at the rate of Rs 2 per square metre.

Ans: Side of the square plot = 250 m
Area of the square plot = Side ×× Side = 250 × 250 = 62,500 m^2
Rate of levelling the plot = Rs. 2 per m^2
Cost of levelling the square plot = Rs. 62,500 × 2 = Rs. 1,25,000

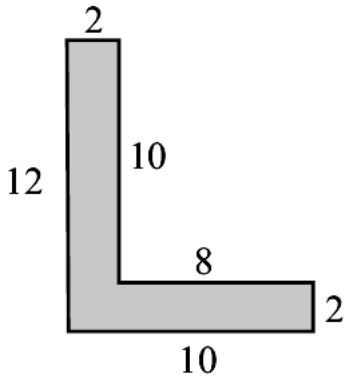
13. If the cost of fencing a rectangular field at Rs. 7.50 per metre is Rs. 600, and the length of the field is 24 m, then find the breadth of the field
Ans: Cost of fencing the rectangular field = Rs. 600
Rate of fencing the field = Rs. 7.50 per m
Therefore, perimeter of the field = Cost of fencing / Rate of fencing = 600 / 7.50 = 80 m
Now, length of the field = 24 m
Therefore, breadth of the field = (Perimeter/2)− Length
= (80/2) − 24 = 16 m

SECTION – D

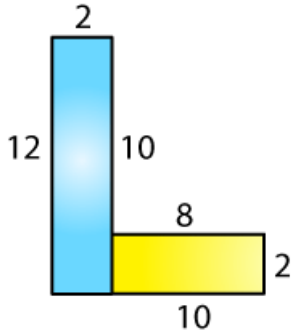
Questions 14 to 17 carry 3 marks each.

14. A square sheet of side 5 cm is cut out from a rectangular piece of an aluminimum sheet of length 9 cm and breadth 6 cm. What is the area of the aluminium sheet left over?
Ans: We have, Side of the square sheet cut out = 5 cm,
Length of the rectangular sheet = 9 cm and
Breadth of the rectangular sheet = 6 cm
Now, the area of the square sheet cut out = Side × Side = 5 × 5 = 25 cm^2
Also, the area of the rectangular sheet = Length × Breadth = 9 × 6 = 54 cm^2
So, the area of the sheet left over = Area of the rectangular sheet − Area of the square sheet cut out
= 54 − 25 = 29 cm^2
Hence, the area of the aluminium sheet left over is 29 cm2

15. Split the following shapes into rectangles and find the area of each. (The measures are given in centimetres)



Ans: Total area of the figure = 12 × 2 + 8 × 2 = 40 cm^2



16. If the ratio between the length and the perimeter of a rectangular plot is 1 : 3, then find the ratio between the length and breadth of the plot.
Ans: It is given that Length of rectangle/Perimeter of rectangle = 1/3
$\Rightarrow$ $l / (2l + 2b) = 1/3$
After cross multiplying, we get:
$3l = 2l + 2b \Rightarrow l = 2b \Rightarrow \frac{l}{b} = \frac{2}{1}$
Thus, the ratio of the length and the breadth is 2 : 1.

17. A rectangular piece of land measure 0.7 km by 0.5 km. Each side is to be fenced with four rows of wires. What length of the wire is needed?
Ans: Dimensions of the rectangular land = 0.7 km ×× 0.5 km
Perimeter of the rectangular land = 2 (Length + Breadth)
= 2 (0.7 + 0.5) km = 2 ××1.2 km = 2.4 km
This perimeter is equal to one row of wire required to fence the land.
Therefore, length of wire required to fence the land with four rows of wire = 4 ××2.4 km
= 9.6 km

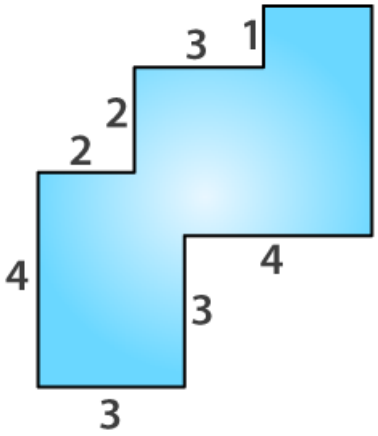
SECTION – E

Questions 18 to 20 carry 4 marks each.

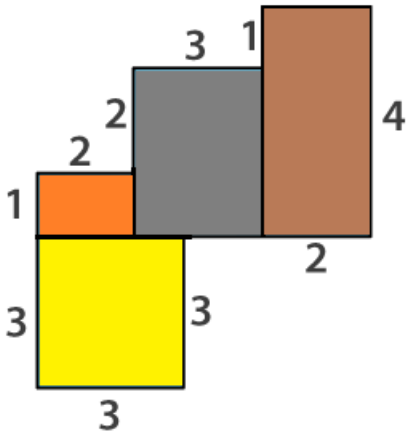
18. A marble tile measures 10 cm × 12 cm. How many tiles will be required to cover a wall of size 3 m × 4 m? Also, find the total cost of the tiles at the rate of Rs 2 per tile.
Ans: Dimension of the tile = 10 cm × 12 cm
Dimension of the wall =3 m × 4 m
= 300 cm × 400 cm (Since, 1 m = 100 cm, so, 3 m = 300 cm and 4 m = 400 cm)
Area of the tile = 10 cm × 12 cm = 120 cm^2
Area of the wall = 300 cm × 400 cm = 1,20,000 cm^2
Number of tiles required to cover the wall = $\frac{Area\ of\ wall}{Area\ of\ one\ tile} = \frac{120000}{120}$ = 1,000 tiles
Cost of tiles at the rate of Rs. 2 per tile = 2 × 1,000 = Rs. 2,000

19. How many envelopes can be made out of a sheet of paper 72 cm by 48 cm, if each envelope requires a paper of size 18 cm by 12 cm?
Ans: We have, length of the sheet of the paper = 72 cm,
breadth of the sheet of the paper = 48 cm,
length of the envelope = 18 cm and
breadth of the envelope = 12 cm
The area of the sheet of the paper = length × breadth = (72 × 48) cm2
And, the area of the envelope = length × breadth = (18 × 12) cm2
Now, the number of envelope that can be made out = Area of the sheet of the paper / Area of the envelope
= (72 × 48) / (18 × 12)
= 4 × 4 = 16

20. By splitting the following figures into rectangles, find their areas (The measures are given in centimetres).



Ans:



Area of yellow region = $3 \times 3 = 9$ cm^2
Area of orange region = $1 \times 2 = 2$ cm^2
Area of grey region = $3 \times 3 = 9$ cm^2
Area of brown region = $2 \times 4 = 8$ cm^2
Total area = $9 + 2 + 9 + 8 = 28$ cm^2
∴ The total area is 28 cm^2.