ELEMENTARY MENSURATION - I

**1. Find the area of a triangle in which base is 1.5 m and height is 75 cm.**

(a) 5625 sq cm (b) 5265 sq cm

(c) 5635 sq cm (d) 5525 sq cm

**2. Find the area of triangle whose one angle is 90o, the hypotenuse is 9 metres and the base is 6.5 metres.**

(a) 20 sqm (b) 20.5 sq m

(c) 20.15 sq m (d) 21 sq m

**3. If the area of a triangle is 150 sq m and base : height is 3 : 4, find its height and base.**

(a) 20 m, 15 m (b) 30 m, 10 m

(c) 60 m, 5 m (d) Data inadequate

**4. Find the area of a triangle in which a = 25 cm, b = 17 cm and c = 12 cm**

(a) 90 sq cm (b) 80 sq cm

(c) 85 sq cm (d)75 sq cm

**5. The sides of a triangular field are 165 metres, 143 metres and 154 metres, find its area.**

(a) 10164 sq m (b) 10146 sq m

(c) 10614 sq m (d) None of these

**6. Find the area of an equilateral triangle each of whose sides measures 12 cm.**

(a) 36 sq cm (b) 18 sq cm

(c) 24 sq cm (d) 30 sq cm

**7. Find the area of a triangle in which each side measures 8 cm.**

(a) 2 sq cm (b) 8 sq cm

(c) 16 sq cm (d) 12 sq cm

**8. The Perimeter of an isosceles triangle is equal to 14 cm; the lateral side is to the base in the ratio 5 to 4. The area, in cm2** **, of the triangle is:**

(a) (b) (c) (d)

**9. In an isosceles right-angled triangle, the length of one leg is 10 metres. Find its area and its perimeter.**

(a) 50 sq m, 34.15 m (b) 50 sq m, 44.14 m

(c) 50 sq m, 34.41 m (d) Data inadequate

**10. The perimeter of an isosceles triangle is 60 cm. If the base is 30 cm, find the length of equal sides.**

(a) 30 cm (b) 15 cm (c) 12 cm (d) 20 cm

**11. Height of an equilateral triangle is 12 cm. Find its area.**

(a) 48 sq cm (b) 36 sq cm

(c) 12 sq cm (d) Data inadequate

**12. Perimeter of a square and an equilateral triangle is equal. If the diagonal of the square is 15** **cm,** **then find the**

(i) area of the equilateral triangle.

(a) 100 sq cm (b) 100 sq cm

(c) 50 sq cm (d) 100 sq cm

**13. Find the diagonal of a rectangle whose sides are 12 metres and 5 metres**

(a) 13 metres (b) 14 metres

(c) 16 metres (d) Can’t be determined

**14. The length of a rectangular plot is 20 metres more than its breadth. If the cost of fencing the plot at the rate of Rs 26.50 per metre is Rs 5300, what is the length of the plot (in metres)?**

(a) 40 (b) 120 (c) 50 (d) None of these

**15. The length and breadth of rectangular piece of land are in the ratio of 5 : 3. The owner spent Rs 3000 for surrounding it from all the sides at the rate of Rs 7.50 per metre. The difference between length breadth is:**

(a) 50 m (b) 100 m (c) 200 m (d) 150 m

**16. Find the area of a rectangle whose one side is 3 metres and the diagonal is 5 metres.**

(a) 12 sq m (b) 8 sq m (c) 16 sq m (d) 14 sq m

**17. A rectangular carpet has an area of 120 and a perimeter of 46 m. The length of its diagonal is:**

(a) 15 m (b) 16 m (c) 17 m (d) 20 m

**18. When the length of a rectangular plot is increased by four times its perimeter becomes 480 metres and area 12800 sq m. What was its original length (in metre)?**

(a) 160 (b) 40

(c) 20 (d) Can’t be determined

**19. If the width of a rectangle is 2 m less than its length, and its perimeter is 32 m, the area of the rectangle is:**

(a) 224 (b) 108 (c) 99 (d) 63

**20. The area of a rectangular courtyard is 100 sq metres. Had the length of the courtyard been longer by 2 metres, the area would have been increased by 10 sq metres. Find the length and breadth of the courtyard.**

(a) 20 m, 5 m (b) 25 m, 4 m

(c) 30 m, 30 m (d) Data inadequate

**21. If increasing the length of a rectangular field by 8 metres, area also increases by 32 sq metres, then find the value of its width.**

(a) 4 m (b) 6 m (c) 9 m (d) 12 m

**22. There is a rectangular field of area 48 sq cm. Sum of its diagonal and length is 3 times of its breadth. Find the length and the breadth of the rectangle.**

(a) 8 cm, 6 cm (b) 12 cm, 4 cm

(c) 16 cm, 3 cm (d) Data inadequate

**23. Length of a rectangular blackboard is 15 cm more than that of its breadth. If its length is increased by 9 cm and its breadth is decreased by 6 cm, its area remains unchanged. Find the length and breadth of the rectangular blackboard.**

(a) 60 cm, 40 cm (b) 63 cm, 48 cm

(c) 64 cm, 48 cm (d) Data inadequate

**24. Length of a rectangular blackboard is 20 cm more than that of its breadth. If its length is increased by 15 cm and its breadth is decreased by 10 cm, its area remains unchanged. Find the perimeter of the black board.**

(a) 150 cm (b) 280 cm

(c) 270 cm (d) 160 cm

**25. Length of a rectangular field is increased by 8 metres and breadth is decreased by 4 metres, area of the field remains unchanged. If length be decreased by 6 metres and breadth be increased by 5 metres, again area remains unchanged. Find the area of the rectangle.**

(a) 283.5 sq m (b) 284 sq m

(c) 285 sq m (d) Data inadequate

**26. Length of a rectangular field is increased by 21 metres and breadth is decreased by 9 metres, area of the field remains unchanged. If length be decreased by 21 metres and breadth be increased by 15 metres, again area remains unchanged. Find the length of diagonal of the rectangle.**

(a) 90 m (b) 64 m

(c) 95.3 m (approx) (d) 64.8 m (approx)

**27. The length of a rectangular plot is 144 m and its area is same as that of a square plot with one of its sides being 84 m. The width of the plot is:**

(a) 7 m (b) 49 m (c) 14 m (d) Data inadequate

**28. Find the diagonal of a square field whose side is of 5 m length**

(a) 5 m (b) 10 m (c) 10 m (d) None of these

**29. In order to fence a square Manish fixed 48 poles. If the distance between two poles is 5 metres then what will be the area of the square so formed?**

(a) 2600 (b) 2500

(c) 3025 (d) None of these

**30. If the ratio of areas of two squares is 9 : 1, the ratio of their perimeters is:**

(a) 9 : 1 (b) 3 : 4 (c) 3 : 1 (d) 1 : 3

**31. Calculate the cost of surrounding** **with a fence a square field of 16 hectares at Rs 20 per metre.**

(a) Rs 30000 (b) Rs 24000 (c) Rs 32000 (d) Rs 36000

**32. A square room is surrounded by a verandah of width 3 metres. Area of the verandah is 96 sq metres. Find the area of the room.**

(a) 36 sq m (b) 25 sq m

(c) 49 sq m (d) Data inadequate

**33. A rectangular room is 6 m wide and 3 m high. If the area of its walls is 81 sq m, find the length.**

(a) 6.5 m (b) 5 m (c) 6 m (d) 7.5 m

**34. Find the area of a parallelogram whose base is 35 metres and altitude 18 metres.**

(a) 630 sq m (b) 650 sq m

(c) 730 sq m (d) 660 sq m

**35. Find the area of a parallelogram; if its two adjacent sides are 12 cm and 14 cm and if the diagonal connecting the ends is 18 cm.**

(a) 176.49 sq cm (b) 167.49 sq cm

(c) 167.94 sq cm (d) None of these

**36. Find the area of a parallelogram whose two adjacent sides are 130 metres and 140 metres and one of the diagonals 150 metres long.**

(a) 16800 sq m (b) 17800 sq m

(c) 18600 sq m (d) Can’t be determined

**37. A parallelogram has an area of 150 cm2. If the distance between its opposite sides are 15 cm and 25 cm. Find the sides of the parallelogram.**

(a) 10 cm, 6 cm (b) 12 cm, 8 cm

(c) 8 cm, 4 cm (d) Data indequate

**38. Find the area of a trapezium whose parallel sides are 11 metres and 25 metres long and the non-parallel sides are 15 metres and 13 metres long respectively.**

(a) 216 sq m (b) 316 sq m

(c) 215 sq m (d) 206 sq m

**39. The two parallel sides of a trapezium of area 400 sq cm measure 15 cm and 35 cm. What is the height of the trapezium.**

(a) 15 cm (b) 25 cm (c) 16 cm (d) 24 cm

**40. If a piece of wire 20 cm long is bent into an arc of a circle subtending an angle of 60o** **at the centre, then the radius of the circle (in cm) is:**

(a) (b) (c) (d)

**41. (i) A horse is placed inside a rectangular enclosure 40 metres by 36 metres and is tethered to one corner by a rope 14 metres long. Over what area can it graze?**

(a) 154 sq m (b) 124 sq m

(c) 164 sq m (d) Data inadequate

**(ii) If the horse is outside the enclosure and is tethered to the corner by the same rope, over what area can it graze?**

(a) 254 sq m (b) 462 sq m

(c) 616 sq m (d) Data inadequate

**42. There are two concentric circles of radii 15 cm and 5 cm respectively. If larger circle makes 100 revolutions to cover a certain distance, then find the number of revolutions made by smaller circle to cover the same distance.**

(a) 300 revolutions (b) 250 revolutions

(c) 125 revolutions (d) Data inadequate

**43. There are two concentric circles of radii 12 cm and 4 cm respectively. If larger circle makes 70 revolutions to cover a certain distance, then find the number of revolutions made by smaller circle to cover the same distance.**

(a) 210 (b) 120 (c) 240 (d) 225

**44. When 111 metres of carpet will cover a floor 18.5 matres by 7.5 metres, what is the width of the carpet?**

(a) 1.25 metres (b) 2 metres

(c) 2.75 metres (d) 2.25 metres

**45. A ractangular garden has 5 metres wide road outside around all the four sides. The area of the road is 600 square metres. What is the ratio between the length and the breadth of that plot?**

(a) 3 : 2 (b) 4 : 3 (c) 5 : 4 (d) Data inadequate

**46. A rectangular field is 125 m long and 68 m broad. A path of uniform width of 3 metres runs round the field inside it. Find the area of the path.**

(a) 1122 sq m (b) 1212 sq m

(c) 2211 sq m (d) None of these

**47. A square garden is 20 metres long. It has 2 metres wide pavements all round it both on its inside and outside. Find the total area of the pavements.**

(a) 320 sq m (b) 325 sq m

(c) 240 sq m (d) None of these

**48. The diameter of the driving wheel of a bus is 140 cm. How many revolutions per minute must the wheel make in order to keep a speed of 66 km per hour?**

(a) 250 (b) 300 (c) 200 (d) 350

**49. The circumference of a circular garden is 512 metres. Inside the garden, a road of 7 m width runs round it. Calculate the area of this road.**

(a) 4340 sq m (b) 3430 sq m

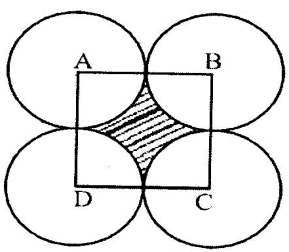
(c) 3450 sq m (d) 3550 sq m

**50. An equilateral triangle has side 4 m. Three circles are drawn from the three vertices of the triangle, each of diameter equal to the side of the triangle. Find the area of the space inside the triangle which is not covered by the circles.**

(a) 0.648 sq m (b) 0.548 sq m

(c) 6.48 sq m (d) Data inadequate

**51. In the figure given below ABCD is a square and the circle are all congruent, each having its radius equal to 7 cm. Find the area of the shaded region in sq cm.**



(a) 42 sq cm (b) 38.5 sq cm

(c) 84 sq cm (d) 24 sq cm

**52. The length of a rectangle is increased by 25%. By what per cent should the width be decreased to maintain the same area?**

(a) 20% (b) 25% (c) 16% (d) 24%

**53. A rhombus of area 216 sq cm has one of its diagonals of 24 cm. Find the other diagonal and side of the rhombus.**

(a) 18 cm, 30 cm (b) 18 cm, 15 cm

(c) 9 cm, 15 cm, (d) Data inadequate

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| **Answer keys** | | | | |
| 1. (a)  2. (c)  3. (a)  4. (a)  5. (a)  6. (a)  7. (c)  8. (d)  9. (a)  10. (b)  11. (a) | 12. (b)  13. (a)  14. (d)  15. (a)  16. (a)  17. (c)  18. (b)  19. (d)  20. (a)  21. (a)  22. (a) | 23. (b)  24. (b)  25. (a)  26. (c)  27. (b)  28. (a)  29. (d)  30. (c)  31. (c)  32. (b)  33. (d) | 34. (a)  35. (c)  36. (a)  37. (a)  38. (a)  39. (c)  40. (d)  41.(i) (a)  (ii) (b)  42. (a)  43. (a) | 44. (a)  45. (d)  46. (a)  47. (a)  48. (a)  49. (b)  50. (a)  51. (a)  52. (a)  53. (b) |