B.M.K TUTORIALS, SHIMOGA

SSLC MID TERM EXAMINATION-MODEL PAPER - 4

## Subject : Mathematics

Time :3 hrs

Max. Marks = 80

I. Answer the following questions.   1 x 8 = 8

1)   In a progression, sum of 11 terms is 300 & the sum of 10 terms is 280. Find the 11th term.

2)   Sides of triangles are 7 cm, 24 cm , 25cm. Determine whether it form right triangles.

3)   Solve the pairs of linear equations s - t = 3 and $\frac{s}{3} + \frac{t}{2} = 6$

4)   In the figure, If AR = 4cm find AS

5)   If the perimeter of a circle is equal to that of a square, then the ratio of their areas is ....

6)   If (1, 2), (4,y), (x, 6) and (3, 5) are the verticies of a parallelogram taken in order, find x and y

7)   Find the HCF of the 336 and 54

8)   Angle in a semicircle is ....
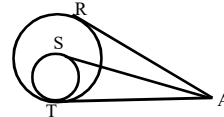
II. Answer the following questions.   1 x 8 = 8

9)   -1 + 2x, 5, 5 + x are in AP then find the value of x

10)   Sides of two similar triangles are in the ratio 4:9. Areas of these triangles are in the ratio

11)   Solve the pairs of linear equations $\sqrt{2}x + \sqrt{3}y = 0$ & $\sqrt{3}x - \sqrt{8}y = 0$

12)   Two circles having same centres but different radii are called...............circles

13)   Find the area of a quadrant of a circle whose radius is 7 cm.

14)   Find the LCM of 510 and 92

15)   ΔABC ~ ΔDEF and their areas be respectively 64 cm² and 121 cm². If EF = 15.4 cm.

        Find BC

16)   Find the distance between the points (a, b) and (-a, -b)

III. Answer the following questions.   2 x 8 = 16

17)   Almas climbed 23 steps of Golgumbaz in the first minute. After that she climbed 2 steps less

        than what she climbed in the previous minute. If she reached the whispering gallary of Gol

        gumbaz after 7 minutes, how many steps she climbed to reach the whispering galery?

18)   The lengths of the diagonals of a Rhombus are 12cm and 16cm. Find the length of the side of

        the Rhombus

19)   The coach of a cricket team boys 7 bats and 6 balls for Rs 3800. Later she buys 3 bats and 5

        balls for Rs. 1750. Find the cost of each bat and cach ball.
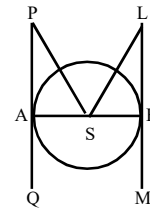
20) In the figure, PQ = LM = 24cm and PS = LS = 13cm find the length of AB.

21) A chord of a circle of radius 15cm subtends an angle of 60^0 at the centre. Find the areas of the corresponding minor and major segments of the circle

22) Draw a circle of radius 3cm. Take two points P and Q on one of its extended diameters each at a distance of 7cm from its centre, Draw tangents to the circle from these two points P and Q

23) Show that the points (1, 7), (4, 2), (-1, -1) and (-4, 4) are the verticies of a square

24) Prove that $\sqrt{2}$ is irrational

IV. Answer the following questions.   3 x 9 = 27

25) The angles of a triangle are in A.P. If the smallest angle is 40^0, find the angles of a triangle?
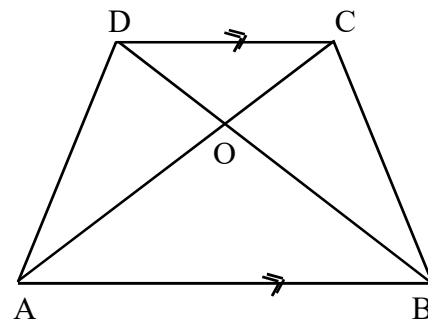
OR

Find the number of terms the series : 15 + 12 + 9 + 6 +.........................= -90

26) ABCD is a trapezium in which AB || CD and is its diagonals intersect each other at the point O
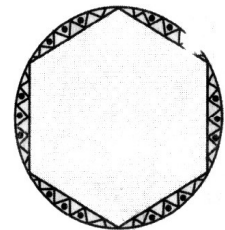
Show That $\dfrac{AO}{BO} = \dfrac{CO}{DO}$

OR

Sides AB and BC and median AD of a triangle ABC are respectively proportional to sides PQ and QR and median PM of $\triangle PQR$ Show that $\triangle ABC \sim \triangle PQR$

27) A round table cover has six equal designs. If the radius of the cover is 28m, Find the cost of making the designs at the rate of Rs. 0.35 per Sq. m.
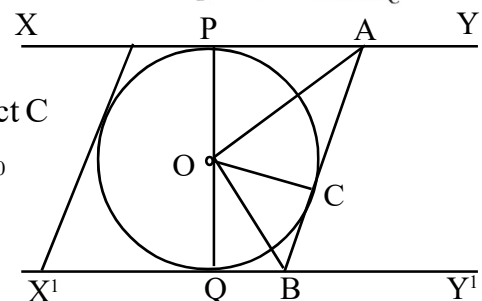
OR

On a square handkerchef, nine circular designs each of radius 7 cm are made. Find the area of the remaining portion o the handkerchef.
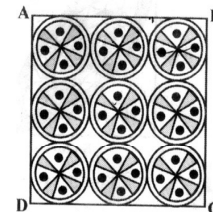
28) In Fig.XY and X^1Y^1 are two parallel tangents to a circle with centre O and an other tangent AB with point of Contact C intersecting XY at A and X^1Y^1 at B Prove that $\angle AOB = 90^0$

29) The sum of the digits of a two digits numbers is 9. Also nine times this number is twice the number obtained by reversing the order of the digits. Find the numbers.

30) Draw a right triangle in which the sides (other than hypotenuse) are of length 4cm and 3cm Then construct another triangle whose sides are $\frac{5}{3}$ times the corresponding sides of the given triangle

31) Find the value of k, if the points A(2, 3), B(4, k) and C(6, -3) are collinear

32) Two poles of height 6m and 11m stand on a plane ground. If the distace between the feet of the poles is 12m. Find the distance between their tops.

33) If the sum of first 7 terms of an AP is 49 and that of 17terms is 289. Find the sum of first n terms.

V. **Answer the following** **4 x 4 = 16**

34) Draw a triangle ABC with Sides BC = 6cm, AB = 5cm, AB = 5cm $\angle$ABC = 60^0,Then construct a triangle whose sides are $\frac{3}{4}$ times the corresponding sides of triangle ABC

35) Solve Graphically : $2x + y - 6 = 0$ & $4x - 2y -4 = 0$

36) The sum of the third and the 7th terms of an AP is 6 and their product is 8. Find the sum of first 16 terms of the AP
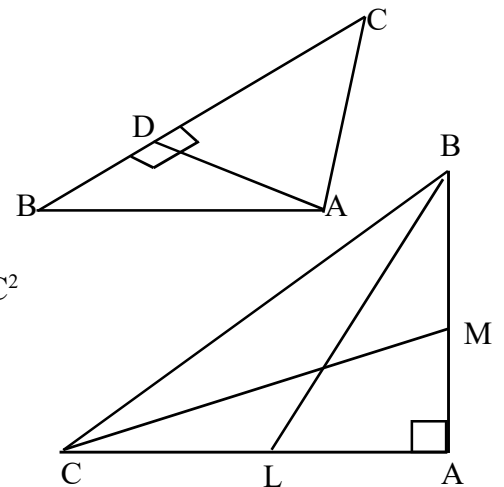
<center>OR</center>

Find the sum of all three digit numbers which leave remainder 1 when divided by 7

37) In the figure, If $AD \perp BC$. Prove that $AB^2 + CD^2 = BD^2 + AC^2$

<center>OR</center>

BL and CM are medians of a triangle ABC right angled at A.

Prove that $4(BL^2 + CM^2) = 5BC^2$

VI. **Answer the following** **5 x 1 = 5**

38) Prove that " The ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides"