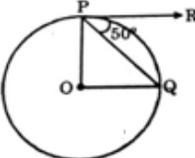
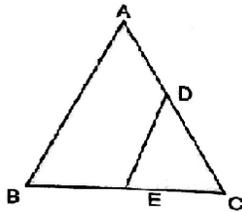




S.NO	MCQ(1 Mark Each)
1	Find the value of k so that the following system of equations has no solution: $3x - y - 5 = 0, 6x - 2y + k = 0$ (a) $k \neq 10$ (b) $k \neq -10$ (c) $k = -10$ (d) None of these
2	How many polynomials can you find having 3 and -5 as their only zeroes? (a) One (b) Two (c) Three (d) More than three
3	Two triangles are similar but not congruent and the lengths of the sides of the first are 6cm, 11cm and 12cm. The ratio of the corresponding sides of first and second triangles is 1 : 2. What is the perimeter of the second triangle? (a) 29 cm (b) 53 cm (c) 58 cm (d) 56 cm
4	If A and B are acute angles and $\sin A = \cos B$, then the value of A + B is (a) 45° (b) 90° (c) 30° (d) 60°
5	If 2 is a root of the equation $x^2 + bx + 12 = 0$, find the value of b. (a) 8 (b) -8 (c) ± 8 (d) none of these
6	Which of the following is not a quadratic equation? (a) $x - \frac{3}{x} = 4$ (b) $3x - \frac{5}{x} = x^2$ (c) $x + \frac{1}{x} = 3$ (d) $x^2 - 3 = 4x^2 - 4x$
7	If a pair of equations is inconsistent, then the lines will be (a) parallel (b) always coincident (c) always intersecting (d) intersecting or coincident
8	In the figure, if O is centre of a circle, PQ is a chord and the tangent PR at P makes an angle of 50° with PQ, then find $\angle POQ$. 
9	The distance of the point (-4, -7) from the y axis is (a) 4 units (b) 7 units (c) 11 units (d) 3 units
10	If p - 1, p + 3, 3p - 1 are in A.P., then p is equal to (a) 4 (b) -4 (c) 2 (d) -2
VSA-I VERY SHORT ANSWER TYPE QUESTIONS(1 Mark Each)	
11	If the sum of the zeroes of the quadratic polynomial $ky^2 + 2y - 3k$ is equal to twice their product, find the value of k.
12	If the median of a distribution exceeds the mean by 3, find by what number the mode exceeds its mean.
13	In ΔABC in the adjacent fig., $DE \parallel AB$. If $AD = 2x$, $DC = x + 3$, $BE = 2x - 1$ and $CE = x$, then find the value of x.



14	An observer 1.5 m tall is 28.5 away from a tower 30 m high. Find the angle of elevation of the top of the tower from his eye.
15	If $\sqrt{2} \sin \theta = 1$, find the value of $\sec^2 \theta - \operatorname{cosec}^2 \theta$.
16	The abscissa and ordinate of the point of intersection of the less than and the more than cumulative frequency curves of a frequency distribution are 75 and 30 respectively. What is the total frequency of the distribution?
17	If the angle between two radii of a circle is 100° , find the angle between the tangents at the ends of the radii.
18	In the figure, QR is a common tangent to given circle which meet at T. Tangent at T meets QR at P. If $QP = 3.8$ cm, then find the length of QR.
19	Find the value of a, for which point $P\left(\frac{a}{3}, 2\right)$ is the midpoint of the line segment of the line segment joining the point Q (- 5, 4) and R (- 1, 0).
20	7 th term of an AP is 40. Find the sum of its first 13 terms.
VSA-II VERY SHORT ANSWER TYPE QUESTIONS(2 Marks Each)	
21	In the adjacent fig., A, B and C are points on OP, OQ and OR respectively such that $AB \parallel PQ$ and $AC \parallel PR$. Show that $BC \parallel QR$.
22	If $4 \cos \theta = 11 \sin \theta$, find the value of $\frac{11 \cos \theta - 7 \sin \theta}{11 \cos \theta + 7 \sin \theta}$
	OR
	Evaluate : $\frac{\operatorname{cosec} 13^\circ}{\sec 77^\circ} - \frac{\cot 20^\circ}{\tan 70^\circ}$
23	Write the nature of roots of quadratic equation $4x^2 + 4\sqrt{3}x + 3 = 0$.
24	The following data gives the information on the observed lifetimes (in hours) of 225

electrical components :						
Lifetimes (in hours)	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100	100 - 120
Frequency	10	35	52	61	38	29
Determine the modal lifetimes of the components.						
25	Find the ratio in which y axis divides the line segment joining the points A (5, - 6) and B (- 1, - 4). OR Show that the points A (0, 1), B (2, 3) and C (3, 4) are collinear.					
26	Find the 10 th term from the last term of the AP:8,10,12. . .126.					
27	Which term of the AP:3,15,27,39 . . .will be 132 more than its 54 th term?					
28	Is 184 a term of the sequence 3, 7, 11... ?					
SA-II SHORT ANSWER TYPE QUESTIONS(3 Marks Each)						
29	Solve the following pair of equations by reducing to linear equations in two variables: $\frac{2}{\sqrt{x}} + \frac{3}{\sqrt{y}} = 2 \text{ and } \frac{4}{\sqrt{x}} - \frac{9}{\sqrt{y}} = -1$ OR The sum of the digits of a two digit number is 9.The number obtained by reversing the order of digits of the given number exceeds the given number by 27.Find the given number.					
30	Find the zeroes of the quadratic polynomial $5x^2 + 8x - 4$ and verify the relationship between the zeroes and the coefficient of the polynomial					
31	PQR is a right triangle right angled at P and M is a point on QR such that PM is perpendicular to QR. Show that $PM^2 = QM \times MR$. OR The perpendicular from A, on side BC of a ΔABC intersects BC at D such that $DB = 3 CD$. Prove that $2AB^2 = 2 AC^2 + BC^2$.					
32	Prove that : $\frac{\cos A}{1-\tan A} - \frac{\sin A}{\cot A-1} = \sin A + \cos A$					
33	Find the arithmetic mean of the following data:					
	Class Interval	100-120	120-140	140-160	160-180	180-200
	Frequency	12	14	8	6	10
34	Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre of the circle.					
35	Prove that the point (3, 0), (6, 4) and (-1, 3) are the vertices of a right angled isosceles triangle					
36	If the sum of first 7 terms of AP is 49 and that of first 17 terms is 289,find the sum of first n terms. OR How many terms of the AP3,5,7 ...must be taken so that the sum is 120?					
37	Prove that : $(\operatorname{cosec} \theta - \cot \theta)^2 = \frac{1-\cos \theta}{1+\cos \theta}$					
38	Show that A (- 1, 0), B (3, 1), C (2, 2) and D (- 2, 1) are the vertices of a parallelogram.					

39	If P (2, -1), Q (3, 4), R (-2, 3) and S (-3, -2) be four points in a plane, show that PQRS is a rhombus.																
40	Prove that : $(\operatorname{cosec} \theta - \sin \theta)(\sec \theta - \cos \theta)(\tan \theta + \cot \theta) = 1$																
LA –LONG ANSWER TYPE QUESTIONS (4 Marks Each)																	
41	Solve the following pair of linear equations graphically: $4x - y = 4$ and $3x + 2y = 14$.																
42	What should be added to $x^3 + 5x^2 + 7x + 3$ so that it is completely divisible by $x^2 + 2x$.																
43	Prove that in a triangle, if the square of one side is equal to the sum of the squares of the other two sides, then the angle opposite the first side is right. OR Prove that the ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding medians.																
44	The angle of elevation of the top of a hill from the foot of a tower is 60° and the angle of elevation of the top of the tower from the foot of the hill is 30° . If the tower is 50m high, find the height of the hill. OR From the top of a building 60 m high the angles of depression of the top and the bottom of a tower are observed to be 30° and 60° . Find the height of the tower.																
45	The sum of the squares of two consecutive odd numbers is 394. Find the numbers.																
46	Find the values of x and y, if the median of the below data is 31. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>Class</td> <td>0-10</td> <td>10-20</td> <td>20-30</td> <td>30-40</td> <td>40-50</td> <td>50-60</td> <td>Total</td> </tr> <tr> <td>Frequency</td> <td>5</td> <td>x</td> <td>6</td> <td>y</td> <td>6</td> <td>5</td> <td>40</td> </tr> </table>	Class	0-10	10-20	20-30	30-40	40-50	50-60	Total	Frequency	5	x	6	y	6	5	40
Class	0-10	10-20	20-30	30-40	40-50	50-60	Total										
Frequency	5	x	6	y	6	5	40										
47	The sum of the squares of two consecutive even numbers is 340. Find the numbers.																
48	The sum of the squares of two consecutive natural numbers is 421. Find the numbers.																