## DAV BR PUBLIC SCHOOL, BINA (MP) CLASS: IX-B

## TIME: 3Hrs

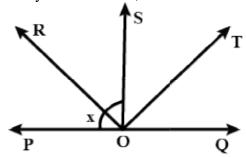
## **SUBJECT: MATHEMATICS**

**MM : 80** 

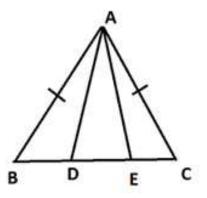
Attempt all the questions							
1.	Which of the following is in a) $\sqrt{\frac{4}{9}}$	trational? b) $\frac{4}{5}$	c)	$\sqrt{7}$	d) <del>\{81</del>		
2.	If $(2^3)^2 = 4^x$ . Then $3^x = a^{3} - 3$	b) 6	c)	9	d) 27		
3.	$\frac{1}{\sqrt{9}-\sqrt{8}} \text{ is equal to}$ a) $3+2\sqrt{2}$	b) $\frac{1}{3+2\sqrt{2}}$	c)	$3 - 2\sqrt{2}$	d) $\frac{3}{2} - \sqrt{2}$		
4.	The rationalisation factor of a) $-\sqrt{3}$	$\sqrt{3}$ , is b) $\frac{1}{\sqrt{3}}$	c)	$2\sqrt{3}$	d) $-2\sqrt{3}$		
5.	If a + b + c =9 and ab + bc + a) 35	$ca = 23$ , then $a^2 + b^2 + c^2$ b) 58	$c^{2} = c$	127	d) None of these		
6.	If $a-b = -8$ and $ab = -12$ then a) -244	$a^{3}-b^{3}=$ b) -240	c)	-224	d) -260		
7.		b) (a+x-1)(a-x+1)		(a+x+1)(a-x-1)	d) None of these		
8.	The expression $(a-b)^3 + (b-c)(a)$ a) $(a-b)(b-c)(c-a)$	he expression $(a-b)^3 + (b-c)^3 + (c-a)^3$ can be factoriz a) $(a-b)(b-c)(c-a)$		3(a-b)(b-c)(c-a)			
	c) -3(a-b)(b-c)(c-a)	c) $-3(a-b)(b-c)(c-a)$		$(a+b+c)(a^2+b^2+c^2-ab-bc-ca)$			
9.	The value of k for which x-1 a) 3	is a factor of $4x^3 + 3x^2 - b$ 1		k, is -2	d) -3		
10.	Let $f(x)$ be a polynomial such that $f(\frac{-1}{2}) = 0$ , then a factor of $f(x)$ is						
	a) 2x-1	b) 2x+1	c)	x-1	d) x+1		
11.	The distance of the point P(4 a) 4	<ul><li>4, 3) from the origin is</li><li>b) 3</li></ul>	c)	5	d) 7		
12.		<ul><li>The abscissa of point is positive in the</li><li>a) First and Second Quadrant</li><li>c) Third and Fourth Quadrant</li></ul>		Second and Third Quadrant			
	c) Third and Fourth Q			Fourth and First Quadrant			
13.	The point of intersect of the a) Ordinate	coordinate axes b) Abscissa	c)	Quadrant	d) Origin		
14.	How many least number of a) One	distinct points determine a b) two		que line ? Three	d) four		

15.	If one angle of a triangle is equal to the sum of the other two angles , then the triangle isa) An isosceles triangleb) An obtuse trianglec) An equilateral triangled) A right angle					
16.	Which of the following is not the criterion for the congrua) SASb) SSAc	uence of triangle?	d) SSS			
17.	In an isosceles triangle, if the vertex angle is twice the s vertex angle of the triangle is a) $100^0$ b) $120^0$ c	-	, then the measure of d) $130^0$			
18.	ABC is an isosceles triangle such that $AB = AC$ and $AD$ Then $\angle BAD =$ a) 55 <sup>0</sup> b) 70 <sup>0</sup> c	is the median to base $35^{0}$	BC an $\angle ABC = 35^{\circ}$ . d) $110^{\circ}$			
19.	<ul> <li>Assertion: 6<sup>8</sup>÷ 6<sup>4</sup> = 6<sup>4</sup></li> <li>Reason : If a&gt; 0 be a real number and p and q be rational numbers, then a<sup>p</sup>x a<sup>q</sup>=a<sup>p+q</sup></li> <li>(A): Both A and R are true R is the correct explanation of A</li> <li>(B) Both A and R are true but R is not the correct explanation of A.</li> <li>(C) A is true but R is false.</li> <li>(D) A is false but R is true.</li> </ul>					
20.	<ul> <li>Assertion: The rationalizing factor of 4+3√3 is 4-3√3.</li> <li>Reason: If the product of two irrational numbers is rational then each one is called the rationalizing factor of the other.</li> <li>(A) Both A and R are true and R is the correct explanation of A.</li> <li>(B) Both A and R are true but R is not the correct explanation of A.</li> <li>(C) A is true but R is false.</li> <li>(D) A is false but R is true.</li> </ul>					
21.	Show that 0.23535 can be expressed in the form $\frac{p}{q}$ , where p and q are integers and $q \neq 0$ .					
22.	Factorise : 27-125a <sup>3</sup> -135a+225a <sup>2</sup>					
23.	The area of the triangle formed by the points A(2,0), B(6,0)and C(4,6).					
24.	The cost of a notebook is twice the cost of apen .write a linear equation in two variables to represent this statement.					
25.	If a point C lies between two points A and B such that AC= BC then prove that $AC=\frac{1}{2}AB$ . Explain by drawing by the figure.					
26.	Represent $\sqrt{9.3}$ on the number line.					
27.	Find the value of k , if x-1 is a factor of $4x^3 + 3x^2 - 4x + k$ .					
28.	In figure , if $AC = BD$ , then prove that $AB = CD$			3		
	A B C	D	D <b>2</b>	- 6 4		

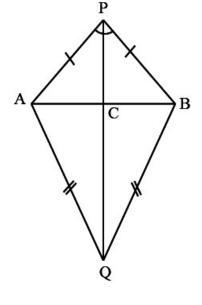
29. In figure, ray OS stands on a line POQ. Ray OR and ray OT are angle bisectors of  $\angle POS$  and  $\angle SOQ = 3$ , respectively. If  $\angle POS = x$ , find  $\angle ROT$ 



30. In a isosceles triangle ABC with AB=AC. D and E are the points on BC such that BE =CD. Show 3 that AD=AE



- 31. ABC is an isosceles triangle with AB = AC. Draw AP $\perp$ BC to show that  $\angle B = \angle C$ .
- 32. Verify that  $x^3 + y^3 + z^3 3xyz = \frac{1}{2}(x + y + z)[(x y)^2 + (y z)^2 + (z x)^2]$ Without actually calculating the cubes, find the value of  $(-12)^3 + (7)^3 + (5)^3$
- 33. It is given that  $\angle XYZ = 64^{\circ}$  and XY is produced to point P. Draw a figure from the given information. 5 If ray YQ bisect  $\angle ZYP$ , find  $\angle XYQ$  and reflex  $\angle QYP$ .
- 34. AB is a line segment. P and Q are points on opposite sides of AB such that each of them is equidistant from the points A and B. Show that the line PQ is the perpendicular bisector of AB.



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- 35. P is a point equidistant from two lines from 1 and m intersecting at a point A. Draw the figure and 5 show that the line AP bisects the angle between them.
- 36. In a classroom of class IX, an activity on real numbers is done with the students. A student has to pick a card and has to answer the questions written on it. The cards picked up by first three students and their questions written on it are given below. Find out its correct option/answer
  - a) Which type of number is  $\sqrt{13}$  (Rational /irrational)
  - b)  $\frac{1}{5}$  is a/an ..... number
  - c) For what value of  $p \frac{251}{2^3 p^2}$  is an non-terminating recurring decimal. Which type of number has decimal expression as non-terminating decimal?
- 37. Suresh wants to paint a wall of his room. He decides to paints the wall in two colours, red and green, 4 divided diagonally. The area of the wall is  $25a^2 35a + 12$ . On the basis of this information give the answer of the following questions.
  - a) Give possible expression for the length and breadth.
  - b) The area of the wall is .....Polynomial.
  - c) If a= 3 then find the area of the wall?
- 38. In a classroom, some friends are seated at the points B, C, D, E, G, H, L, M, as shown in figure. On 4 the basis of this information give the answer of the following questions.
  - a) The coordinates of B.
  - b) The abscissa of the point D and the ordinate of the point H.
  - c) The point identified by the coordinates (-3, -5)
  - d) The coordinates of the points L.

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