

SET-B

## M.M. : 30

## Time: 1 hr 20 min. General Instructions:-

1.	All questions are compulsory.	r	
Q.No.	Section-A	Marks	
1	If the decimal representation of a rational number is-	1	
	(a) Non Terminating (b)Terminating or non terminating repeating		
	(c) Non Terminating non repeating (d) None of these		
2	Which of the following is not a polynomial?		
-	a) $2x^2-x$ (b) $3x^3-(\sqrt{x})^2+1$ (c) $x+\sqrt{5x^2}$ d) $(x+1)/x$		
3	The perpendicular distance of a point P $(8,-5)$ from the x-axis is:	1	
	(a) 5 (b) 8 (c) 3 (d) 13		
4	Assertion: There are infinite number of lines which passes through (3, 2).	1	
	Reason: A linear equation in two variables has infinitely many solutions.		
	(a) Both Assertion (A) & Reason (R) are true, and Reason (R) is the correct explanation		
	of Assertion (A).		
	(b) Both Assertion (A) & Reason (R) are true, but Reason (R) is not the correct exploration of Assertion (A)		
	explanation of Assertion (A).		
	(d) Assertion (A) is false but Reason (R) is true		
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5	The value of $p(x) = 4x^2+3x-2$ at $x = 1$ , is:		
	(a)5 (b)10 (c)-6 (d)6		
	Section-B		
6	Write any two postulates.	2	
7	Express 4.77777in the form of p/q.	2	
8	prove that $x^3+y^3=(x+y)(x^2+y^2-xy)$	2	
9	If (x-2) is a factor of $3x^2-kx+1$ . Then find the value of k?		
10	The cost of a pen is 5 less than the cost of a notebook. Express this situation in the form of linear equation in two variables?		
	Section-C		
11	Find three solution of the given equation $3x+y=3$ .	3	
12	Factorise : $x^3+2x^2-x-2$	3	
13	Write the answer to each of the following questions:	3	
	(i) What is the name of the horizontal and the vertical lines drawn, to determine the		
	position of any point in the Cartesian plane?		
	(ii) What is the name of each part of the plane formed by these two lines?		
	(iii) Find the distance between point (-2,0) and (3,0).		
14	If $[(\sqrt{5})/(2+\sqrt{5})] = a+b\sqrt{5}$ . Then find the value of a and b.	3	
15	Evaluate: $(i)(2a-3b)^3$ $(ii) (2x-y+z)^2$	3	
	1	1	

SET-A

## M.M.: 30

## Time: 1 hr 20 min. General Instructions:-

Q.No.Section-AMarks1If the decimal representation of a number is non-terminating and non-repeating then the number is- (a) a natural number (b) a rational number12Which of the following is a polynomial? a) $2x^2 \sqrt{x}$ (b) $3x^3 (x)^{3+1}$ (c) $x + \sqrt{5}x^2$ d) $(x+1)/x$ 13The perpendicular distance of a point P (5, 8) from the y-axis is: (a) 5 (b) 8 (c) 3 (d) 1314Assertion: There are infinite number of lines which passes through (3, 2). Reason: A linear equation in two variables has infinitely many solutions. (a) Both Assertion (A) & Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A). (c) Assertion (A) is false but Reason (R) is true.15The value of $p(x) = 5x - 4x^2 + 3$ at $x = -1$ , is: (a)3 (b)- (c)-6 (d)626Write any two axioms.27Express 2.77777 in the form of $p/q$ .28If $x+y+z=0$ , then prove that $x^3+y^3+z^3=3xyz$ 29If $(x+3)$ is a factor of $2x^2-kx+3$ . Then find the value of $k$ ?310The cost of a pen is 10 more than the cost of a notebook. Express this situation in the form of linear equation in two variables?311Find three solution of the given equation $x+2y=3$ .312Factorise : $x^3 - 6x^2 + 11x - 6$ .313Write the answer to each of the following questions: (i) What is the name of each part of the plane? (ii) What is the name of each part of the plane? (iii) Find the distance between point (0, -3) and (0, 4).314If $[(\sqrt{3})/(2+\sqrt{3})] = a+b\sqrt{3}$ . Then find the value of a and b.3 <td< th=""><th><u> </u></th><th>All questions are compulsory.</th><th></th></td<>	<u> </u>	All questions are compulsory.		
IIf the decimal representation of a number is non-terminating and non-repeating then the number is. (a) a natural number (c) a whole number (c) a whole number (d) an irrational numberI2Which of the following is a polynomial? a) $2x^2 \sqrt{x}$ (b) $3x^3 (x)^{5i}+1$ (c) $x+\sqrt{5}x^2$ d) $(x+1)/x$ I3The perpendicular distance of a point P (5, 8) from the y-axis is: (a) 5 (b) 8 (c) 3 (d) 13I4Assertion: There are infinite number of lines which passes through (3, 2). Reason: A linear equation in two variables has infinitely many solutions. (a) Both Assertion (A) & Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A). (c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is rue.I5The value of p(x) = $5x-4x^2+3$ at $x = -1$ , is: (a) 3 (b) (c) - (c) - 6 (d) 6I6Write any two axioms.27Express 2.77777 in the form of p/q.28If $x+y+z=0$ , then prove that $x^3+y^3+z^3=3xyz$ 29If $(x+3)$ is a factor of $2x^2+x+3$ . Then find the value of k?I10The cost of a pen is 10 more than the cost of a notebook. Express this situation in the form of linear equation $x+2y=3$ .312Factorise: $x^3 - 6x^2 + 11x - 6$ .313Write the answer to each of the following questions: (i) What is the name of each part of the plane formed by these two lines? (ii) Find the distance between point (0, -3) and (0, 4).314If $[(\sqrt{3})/(2+\sqrt{3})]=a+b\sqrt{3}$ . Then find the value of a and b.315Evaluate: (i)(2a-3b+c)^2 (ii) (2x-5)^33 <th>Q.No.</th> <th colspan="3">Section-A</th>	Q.No.	Section-A		
then the number is- (a) a natural number(b) a rational number(c)(a) an irrational number(c) an irrational number(d) an irrational number(a) ay2x - $\sqrt{x}$ (b)3x^3 (x) <sup>5</sup> +1 (c) x+ $\sqrt{5x^2}$ d) (x+1/x1(a) 2x - $\sqrt{x}$ (b)3x^3 (x) <sup>5+1</sup> (c) x+ $\sqrt{5x^2}$ d) (x+1/x1(a) 5 (b)8 (c) 3 (d) 131(a) 5 (b)8 (c) 3 (d) 131(a) Assertion: There are infinite number of lines which passes through (3, 2). Reason: A linear equation in two variables has infinitely many solutions. (a) Both Assertion (A) & Reason (R) are true, and Reason (R) is the correct explanation of Assertion (A). (b) Both Assertion (A). (c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is true.15The value of $p(x) = 5x - 4x^2 + 3$ at $x = -1$ , is: (a) 3 (b) (c) 6 (d)626Write any two axioms.27Express 2.77777 in the form of $p/q$ .28If $x+y+z=0$ , then prove that $x^3+y^3+z^3=3xyz$ 29If $(x+3)$ is a factor of $2x^2-kx+3$ . Then find the value of k?310The cost of a pen is 10 more than the cost of a notebook. Express this situation in the form of linear equation in two variables?311Find three solution of the given equation $x+2y=3$ .312Factorise: $x^3 - 6x^2 + 11x - 6$ .313Write the ansme of each part of the plane formed by these two lines? (ii) What is the name of the horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane? (iii) Find the distance beuwen point	1	If the decimal representation of a number is non-terminating and non-repeating	1	
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(d) Assertion (A) is false but Reason (R) is true.(a) <b>5</b> The value of $p(x) = 5x-4x^2+3$ at $x = -1$ , is: (a) 3 (b)- (c)-6 (d)6 <b>6</b> Write any two axioms. <b>6</b> Write any two axioms. <b>7</b> Express 2.77777in the form of $p/q$ . <b>8</b> If $x+y+z=0$ , then prove that $x^3+y^3+z^3=3xyz$ <b>9</b> If $(x+3)$ is a factor of $2x^2-kx+3$ . Then find the value of $k$ ? <b>10</b> The cost of a pen is 10 more than the cost of a notebook. Express this situation in the form of linear equation in two variables? <b>11</b> Find three solution of the given equation $x+2y=3$ . <b>12</b> Factorise : $x^3 - 6x^2 + 11x - 6$ . <b>13</b> Write the answer to each of the following questions: (i) What is the name of the horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane? (ii) What is the name of each part of the plane formed by these two lines? <b>14</b> If $[(\sqrt{3})/(2+\sqrt{3})]=a+b\sqrt{3}$ .Then find the value of a and b. <b>315</b> Evaluate: (i)(2a-3b+c) <sup>2</sup> (ii) (2x-5) <sup>3</sup>		(c) Assertion (A) is true but Reason (R) is false.		
5       The value of $p(x) = 5x-4x^2+3$ at $x = -1$ , is:       (a)3       (b)-       (c)-6       (d)6         Section-B         6       Write any two axioms.       2         7       Express 2.77777in the form of $p/q$ .       2         8       If $x+y+z=0$ , then prove that $x^3+y^3+z^3=3xyz$ 2         9       If $(x+3)$ is a factor of $2x^2-kx+3$ . Then find the value of $k$ ?       10         10       The cost of a pen is 10 more than the cost of a notebook. Express this situation in the form of linear equation in two variables?       3         11       Find three solution of the given equation $x+2y=3$ .       3         12       Factorise : $x^3 - 6x^2 + 11x - 6$ .       3         13       Write the answer to each of the following questions:       3         (i) What is the name of the horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane?       3         (ii) What is the name of each part of the plane formed by these two lines?       3         (iii) Find the distance between point (0, -3) and (0, 4).       3         14       If $[(\sqrt{3})/(2+\sqrt{3})]=a+b\sqrt{3}$ . Then find the value of a and b.       3         15       Evaluate: (i)(2a-3b+c)^2       (ii) $(2x-5)^3$ 3		(d) Assertion (A) is false but Reason (R) is true.		
(a)3       (b)-       (c)-6       (d)6         Image: Section-B       Image: Section-B       Image: Section-B       Image: Section-B         6       Write any two axioms.       2         7       Express 2.77777in the form of p/q.       2         8       If $x+y+z=0$ , then prove that $x^3+y^3+z^3=3xyz$ 2         9       If $(x+3)$ is a factor of $2x^2-kx+3$ . Then find the value of k?       Image: Section-C         10       The cost of a pen is 10 more than the cost of a notebook. Express this situation in the form of linear equation in two variables?       3         11       Find three solution of the given equation $x+2y=3$ .       3         12       Factorise : $x^3 - 6x^2 + 11x - 6$ .       3         13       Write the answer to each of the following questions: (i) What is the name of the horizontal and the vertical lines drawn to determine the position of any point in the Cartesian plane? (ii) What is the name of each part of the plane formed by these two lines? (iii) Find the distance between point (0, -3) and (0, 4).       3         14       If $[(\sqrt{3})/(2+\sqrt{3})]=a+b\sqrt{3}$ . Then find the value of a and b.       3         15       Evaluate: (i)(2a-3b+c)^2       (ii) $(2x-5)^3$ 3	5	The value of $p(x) = 5x-4x^2+3$ at $x = -1$ , is:		
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9If $(x+3)$ is a factor of $2x^2$ -kx+3. Then find the value of k?Image: style s	8	If $x+y+z=0$ , then prove that $x^3+y^3+z^3=3xyz$	2	
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position of any point in the Cartesian plane? (ii) What is the name of each part of the plane formed by these two lines?Image: two lines?14If $[(\sqrt{3})/(2+\sqrt{3})]=a+b\sqrt{3}$ . Then find the value of a and b.315Evaluate: (i)(2a-3b+c)^2 (ii) (2x-5)^3 3		(i) What is the name of the horizontal and the vertical lines drawn to determine the		
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14       If $[(\sqrt{3})/(2+\sqrt{3})] = a+b\sqrt{3}$ . Then find the value of a and b.       3         15       Evaluate: $(i)(2a-3b+c)^2$ $(ii)(2x-5)^3$ 3		(iii) Find the distance between point $(0, -3)$ and $(0, 4)$ .		
15Evaluate: $(i)(2a-3b+c)^2$ $(ii)(2x-5)^3$ 3	14	If $[(\sqrt{3})/(2+\sqrt{3})] = a+b\sqrt{3}$ . Then find the value of a and b.		
	15	Evaluate: $(i)(2a-3b+c)^2$ $(ii)(2x-5)^3$	3	



OSDAV Public School, Kaithal Answer key (PT-2) Class : ixth Subject : Maths(Set A)

	Subject Maths(Set 14)	
Q.No.	Section-A	Marks
1	(d) irrational number	1
2	$c)  x + \sqrt{5}x^2$	1
3	(a) 5 units	1
4		1
5	$\frac{c}{c} - 6$	1
6	Section-B	2
0		2
	Let $x = 2.77$ Multipy by 10 both sides - 10x = 2.77	1/2 1/2
	$n = \frac{25}{9}$ $2.7 = \frac{25}{9}$	1/2
8	Solution	1
	$\therefore x^{3} + y^{3} + z^{3} - 3xyz = (x + y + z)(x^{2} + y^{2} + z^{2})$ - xy - yz -zx) Also it is given x + y + z = 0 $\Rightarrow x^{3} + y^{3} + z^{3} - 3xyz = (0)(x^{2} + y^{2} + z^{2} - xy - yz)$ yz -zx) $\Rightarrow x^{3} + y^{3} + z^{3} - 3xyz = 0$ $\Rightarrow x^{3} + y^{3} + z^{3} = 3xyz$	1/2 1/2
9	Put x+3=0 x=-3 (x+3) is a factor of 2x <sup>2</sup> -kx+3	1/2

	So P(-3) =0	
	$2(-3)^2 - k(-3) + 3 = 0$	1/2
	K=-7	1
10	Let the cost of 1 pen=x rs.	1/2
	The cost of 1 notebook=y rs.	1/2
	A. T.Q.	
	x-y=10.	1
	Section-C	
11	Any three solutions.	1+1+1
12	For x = 1, the value of the given expression becomes:	1/
	$p(1) = 1^3 - 6 \times 1^2 + 11 \times 1 - 6 = 0$	1/2
	By factor theorem, $(x + 1)$ is a factor	
	of $x^3 - 6x^2 + 11x - 6$ .	
	Performing long division as shown below:	
	$ x = 1) x^{2} = 5x + 6  x = 1) x^{3} = 6x^{2} + 11x = 6  x^{3} = x^{2}  = + $	1
	$ \begin{array}{r} -5x^{2} + 11x - 6 \\ -5x^{2} + 5x \\ + - \\ \hline 6x - 6 \\ \hline 6x -$	
	<u> </u>	1
	O	
	$a(x) = x^2 = 5x \pm 6$	1/2
	$= x^2 - 2x - 3x + 6$	
	= x(x-2) - 3(x-2)	
	= (x - 3)(x - 2)	
	Polynomial p(x) can be written as: p(x) = (x – 1)q(x) p(x) = (x – 1)(x – 2)(x – 3)	
13	1) Horizontal line- x-axis	1/2+1/2
	Vertical line – y-axis	
	ii) Quadrant iii) 7 units	1 1

14  $y' = \frac{\sqrt{3}}{2+\sqrt{2}} = a + 3\sqrt{3}$  $\frac{53}{2+53} \times \frac{2-53}{2-53} = a+b53$ 1 253-3 = 6+353 4-3 253-3 = a+b 53 1 -3+253=a+b53 on Comparing a = -3b = 21/2+1/2

15  
(1) 
$$(2a - 3b + c)^{2}$$
  
 $(a + b + c)^{2} = a^{2} + b^{2} + c^{2} + 2ab + 2bc + \frac{1}{2}$   
 $(2a + c - 3b)^{2} = (2a)^{2} + (c)^{2} + (3b)^{2} + 2(2a)(c) + 2c)$   
 $+ 2(-3b)$   
 $= 4a^{2} + c^{2} + 4b^{2} + 4ac - 6cb - 6b(2a)^{1/2}$   
 $= 4a^{2} + 4b^{2} + c^{2} - 12ab - 6bc + 4ac \frac{1}{2}$   
(11)  $(2m - 5)^{3}$   
 $(a - b)^{3} = a^{3} - b^{3} - 3a^{2}b + 3b^{2}a$   
 $(2m - 5)^{3} = (2m)^{3} - (5)^{3} - 3(2m)^{2}(5) + 3(5)^{1/2}$   
 $= 8\pi^{3} - 125 - 60\pi^{2} + 150\pi$   
 $= 8\pi^{3} - 60\pi^{2} + 150\pi - 125$ 



OSDAV Public School, Kaithal Answer key (PT-2) Class : ixth Subject : Maths(Set-B)

O No	Section-A	Marks
1	(b) Terminating or non terminating reneating	1
2	$\frac{(x)}{(x+1)/x}$	1
3	c) 5 units	1
4	(b)	1
5	c) 5	1
	Section-B	
6	Any two axioms	2
7	let x = 4.77 0	1/2
	multiplying by 10 both Sides	
	10x = 4.77 × 10	1⁄2
	10x = 47.77	
	Subtract Esu O from Esu. D	1/2
	10x = 47,77 (1	
	22 = 4.11	1/2
	922 = 43	
	$x = \frac{43}{9}$	
8	Solution	
	Q). Verify that <b>x<sup>3</sup> + y<sup>3</sup> = (x+y) ( x<sup>2</sup> - xy + y<sup>2</sup>)</b>	1
	1). R.H.S => $(x+y) (x^2 - xy + y^2)$ => $x^3 - x^2y + xy^2 + x^2y - xy^2 + y^3$ {On multiplying $x^3 + y^3$ with $(x+y) (x^2 - xy + y^2)$ } => $[x^3 + y^3] + (-x^2y + x^2y) + (xy^2 - xy^2)$ => $x^3 + y^3$	1
	Since R.H.S = L.H.S, That is $x^3 + y^3 = x^3 + y^3$ Hence, verified that $x^3 + y^3 = (x+y) (x^2 - xy + y^2)$	

9	Put x-2=0	
	x=2	1/2
	$(x-2)$ is a factor of $3x^2-kx+1$	
	S0 P(2) = 0 $3(2)^2 k(2) \pm 1 = 0$	1/
	$S(2)^{-R}(2) + 1 = 0$ K=13/2	<sup>7</sup> 2
10	Let the cost of 1 pen=x rs.	1/2
	The cost of 1 notebook=y rs.	1/2
	A. T. Q.	
	x+5=y	1
	x-y+5=0	
11	Section-C	1_1_1
11	Any three solutions.	1+1+1
14	P(m)= 23+92 2 2	
	Possible factors -1 2 es. +1 + 2	
	P(1) = 1310002	
	+(1) = 1 + 2(1) = 1 - 2	
	= 1 + 2 - 1 - 2	1/2
	= 0	
	(21-1) is a fater of Phil	
	· ( ) is a juijoir of Im	
	2 1 7 0 7 2	
	$x - 1$ $x + 2x^2 - x - 2(x + 3x + 9)$	1
	$-\chi^3 - \chi^2$	-
	2 - 2 - 2 - 9	
	Sty - n - 2	
	-3/2 -3H	
	22 - 21	
	2/2 -/2	
	X	
	:. n+3n+2 is a factor of P(n)	
	$- \chi^{2} + 9\chi + \chi + 2$	1
	$= \frac{1}{2}(\frac{1}{2}+\frac{1}{2}+\frac{1}{2})$	1
	$= \lambda (\lambda (\lambda) / \lambda + 1)$	
	= (n+2)(n+1).	
	Then P(n) = (n-1)(n+2)(n+1)	1/2
13	i)Horizontal line- x-axis	1/2+1/2
15	Vertical line - v-axis	/21/2
	ii) Quadrant	1
	iii) 5 units	1

$$\begin{array}{rcl}
14 & \frac{J^{5}}{9+J^{5}} &= a+b\sqrt{5} \\
& \frac{J^{5}}{9+J^{5}} &\times \frac{2-J^{5}}{2-J^{5}} &= a+b\sqrt{5} \\
& \frac{-5+2\sqrt{5}}{(2)^{2}-(J^{5})^{2}} &= a+b\sqrt{5} \\
& \frac{-5+2\sqrt{5}}{(2)^{2}-(J^{5})^{2}} &= a+b\sqrt{5} \\
& \frac{-5+2\sqrt{5}}{4-5} &= a+b\sqrt{5} \\
& 5-2\sqrt{5} &= a+b\sqrt{5} \\
& 5-2\sqrt{5} &= a+b\sqrt{5} \\
& 5n & Gmpassing - \\
& a=5 \\
& b=-2 \\
& (11) & (2a-3b)^{3} \\
& (2a-3b)^{3} = (2a)^{3} - (3b)^{3} - 3(3a)^{3}(3b) + 3(2a) \\
& = 8a^{3} - 27b^{3} - 36a^{2}b + 54ab^{3} \\
& (11) & (2n-g+7)^{2} \\
& (2n-g+7)^{2} = (2n)^{2} + (2y)^{2} + (2y)^{2} + 9(2n)(-y) + \\
& + 2(2)(2n-y)^{2} + (2y)^{2} + (2y)^{2} + 9(2n)(-y) + \\
& + 2(2)(2n-y)^{2} + (2y)^{2} + (2y)^{2} + 9(2n)(-y) + \\
& = 4n^{2} + y^{2} + z^{2} - 4ny - 2yz + 4yz
\end{array}$$