# IX Class

I.  One Mark questions:

1.  Expand $\left(2x - \dfrac{1}{x}\right)^2$

2.  Find the product : $\left(n - \dfrac{1}{n}\right)\left(n + \dfrac{1}{n}\right)\left(n^2 + \dfrac{1}{n^2}\right)$

3.  Find the value of $\left(100\,\dfrac{1}{4}\right)^2$

4.  If $2x + 3y = 13$, $xy = 6$ find the value of $4x^2 + 9y^2$

5.  Simplify : $\left(\sqrt{x} + y\right)\left(\sqrt{x} - y\right)$

6.  Simplify : $\left(2a + 3b\right)^2 - \left(2a - 3b\right)^2$

7.  Find the product : $\left(5a + 3b + 2c\right)\left(5a - 3b - 2c\right)$

8.  Expand : $\left(2a + b - c\right)^2$

9.  Expand : $\left(a^2 - 4\right)^3$

10. If a-b=3, ab=10 then find the value of $a^3$-$b^3$

11. Find the product : $\left(3x + 4y\right)\left(9x^2 - 12xy + 16y^2\right)$

12. Find the quotient in $\left(8a^3 + 27\right) \div \left(4a^2 - 6a + 9\right)$ without actual division.

13. The product of $3x - 2y$ and some other factor must be in the form of $a^3$-$b^3$. Find the second factor.

14. Write the general form of polynomial of degree 'n'

15. If $a + b + c = 5, a^2 + b^2 + c^2 = 29$, find the value of $ab + bc + ca$

**II.  Choose the correct answer:**

16. $\left(1 - \sqrt{x}\right)\left(1 + \sqrt{x}\right) =$                                           [      ]

    a) $1 - x^2$              b) $1 - x$              c) $x^2 - 1$              d) $x - 1$

17. $\left(x - \dfrac{1}{x}\right)^2 =$                                           [      ]

    a) $x^2 + \dfrac{1}{x^2} - 2$         b) $x^2 + \dfrac{1}{x} + 2$         c) $x^2 + \dfrac{1}{x^2} + 2$         d) none

18. $(a+b)^2 - (a-b)^2 =$  [    ]

   a) $2ab$  b) $2(a^2+b^2)$  c) $4ab$  d) $2a^2b^2$

19. $(x-1)(x^2+x+1) =$  [    ]

   a) $x-1$  b) $x+1$  c) $x^3+1$  d) $x^3-1$

20. $(x^3+27y^3) \div (x^2-3xy+9y^2) =$  [    ]

   a) $(x+3y)$  b) $(2x-7y)$  c) $x^2+3xy+9y^2$  d) none

21. $(x+4)(x-3) =$  [    ]

   a) $x^2+x+12$  b) $x^2+x-12$  c) $x^2-x+12$  d) $x^2-x-12$

22. If $a^2+b^2+c^2 = ab+bc+ca$ then  [    ]

   a) a+b+c=0  b) abc= 1  c) a = b= c  d) a+b+c = 1

23. $(a-b)^2 + (a+b)^2 =$  [    ]

   a) 2ab  b) 2a²b²  c) a²+b²  d) 2(a²+b²)

24. $(\sqrt{3}-1)^2 =$  [    ]

   a) $4-2\sqrt{3}$  b) $4+2\sqrt{3}$  c) $2-4\sqrt{3}$  d) $2+\sqrt{3}$

25. If $a+b+c = 0$ then $a^3+b^3+c^3 =$  [    ]

   a) abc  b) 0  c) 3bac  d) none

**III.** **Fill in the blanks :**

26. $(a-b)^2 + 4ab =$ _____

27. The co-efficient of x in (2x+7) (x-5) is _____

28. If $x+y = 5$ and $xy = 6$ then $x^2+y^2 =$

29. $(x-2y+z)^2 =$ _____

30. $(a+b)^3 - (a-b)^3 =$ _____

31. $(\sqrt{a}-\sqrt{b})(\sqrt{a}+\sqrt{b})(a+b) =$ _____

32. $(5x-2y)(25x^2+10xy+4y^2) =$ _____

33. $x^3+y^3+1-3xy = (x+y-1)($_____$)$

34. $x + \dfrac{1}{x} = a$ then $x^3 + \dfrac{1}{x^3} =$ _____

35. $x + \dfrac{1}{x} = 2$ then $x^3 + \dfrac{1}{x^3} =$ _____

**IV.** **Matching**

| **Group A** | | **Group B** |
|---|---|---|
| 36. $(a+b)^3$ | [     ] | A. $(a-b)(a^2 + ab + b^2)$ |
| 37. $(a-b)^3$ | [     ] | B. $a^3 - 3b(a+b) - b^3$ |
| 38. $a^3 + b^3$ | [     ] | C. $a^3 + 3ab(a+b) + b^3$ |
| 39. $a^3 - b^3$ | [     ] | D. $a^2 + b^2 + c^2 + 2(ab + bc + ca)$ |
| 40. $(a+b+c)^2$ | [     ] | E. $a^3 - 3ab(a-b) - b^3$ |
| | | F. $(a+b)(a^2 + ab + b^2)$ |
| | | G. $(a+b)(a^2 - ab + b^2)$ |

IX Class Maths Fundamental Material