IX Class

PRACTICE MATERIAL

I. One mark questions:

1. Factorise a^3b^3-125
2. Factorise $a^2-b^2-4c^2+4bc$
3. Find the factors of $3x^4-12$
4. Factorise x^3+27
5. Expand $(2x-3y+1)^2$
6. Factorise $x^2-2x-15$
7. Find the factors of $a^4-\frac{1}{a^4}$
8. Factorise $\frac{a^4}{b^4}-\frac{b^4}{a^4}$
9. Write the method of factorization of any quadratic polynomial.
10. Rewrite $(2x^2+x)^2-9(2x^2+x)+18$ as quadratic polynomial.

II. Choose the correct answer

11. $(2x+3)(x-1)=$ _____ [ ]

    a) $2x^2+x-3$ b) $2x^2-x+3$ c) $2x^2-x-3$ d) none

12. $(2x^2+x-1)\div(x+1)=$ _____ [ ]

    a) $x-1$ b) $2x-1$ c) $2x+1$ d) $x+3$

13. $(0.7)^2-(0.6)^2=$ _____ [ ]

    a) 1.3 b) 13 c) 0.13 d) 0.013

14. $(1.9)^2+2\times1.9\times0.1+(0.1)^2=$ _____ [ ]

    a) 2 b) 3.61 c) 1 d) 4

15. The co-efficient of x in the expansion of $(x-5)(x+4)$ is [ ]

    a) 1 b) 9 c) -1 d) -20

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

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

17. $\left(a^3-b^3\right)\div\left(a-b\right)=$ [ ]

a) $\left(a^2+ab+b^2\right)$ b) $\left(a^2-ab+b^2\right)$ c) $\left(a^2-ab-b^2\right)$ d) none

18. If $a+b+c=0$ then $\frac{a^2}{bc}+\frac{b^2}{ca}+\frac{c^2}{ab}$ = _____ [ ]

a) 0 b) 3 c) 2 d) 1

19. x^6-1 has _____ factors [ ]

a) 1 b) 2 c) 3 d) 4

20. Number of factors of $9a^4-40a^2+16$ is [ ]

a) 4 b) 3 c) 2 d) 0

III. Fill in the blanks

21. The value of $\left(0.2-0.1\right)\left(0.04+0.02+0.01\right)=$ _____

22. $\left(\sqrt{a}+\sqrt{b}\right)^2=$ _____

23. Simplified form of $\left(a-\frac{1}{a}\right)\left(a+\frac{1}{a}\right)\left(a^2+\frac{1}{a^2}\right)=$ _____

24. Expand $\left(2a-x+1\right)^2$ = _____

25. Factors of $27-6x-x^2=$ _____

26. Factorise x^3y^3-1 = _____

27. Expand $\left(\sqrt{3}+1\right)^3$ = _____

28. $\left(a+b\right)^3+\left(a-b\right)^3=$ _____

29. On rewriting $\left(2x^2-x\right)^2-4\left(2x^2-x\right)+3$ we have _____

30. $\frac{a^3+b^3}{\left(a+b\right)}$ = _____

IV. Matching:

31. $\left(\sqrt{2}-1\right)^2$ [ ] A. $a^2+x^2+1-2ax-2x+2a$

32. $\left(a-x+1\right)^2$ [ ] B. $\left(x-16\right)\left(x+12\right)$

33. $\left(\sqrt{x/y}-\sqrt{y/x}\right)\left(\sqrt{x/y}+\sqrt{y/x}\right)$ [ ]

34. $x^2-4x-192$ [ ]

35. $\left(\sqrt{a}+\sqrt{b}\right)^3$ [ ]

C. $a^2+x^2+1+2ax-2x-2a$

D. $x/y-y/x$

E. $3-2\sqrt{2}$

F. $a^3+3\sqrt{ab}+3a\sqrt{b}+b^3$

G. $a\sqrt{a}+3a\sqrt{b}+3\sqrt{a}\,b+b\sqrt{b}$