1. The compound interest on ₹ 1000 at 10% p.a. compounded annually for 2 years is

(a) ₹ 190 **(b)** ₹ 200 **(c)** ₹ 210 **(d)** ₹ 1210

2. If $x + \frac{1}{x} = 2$, then $x^3 + \frac{1}{x^3}$ is equal to

(a) 64 **(b)** 14 **(c)** 8 **(d)** 2

3. The factorisation of $16x^2 + 40x + 25$ is

(a) $(4x + 5)(4x + 5)$ **(b)** $(4x + 5)(4x - 5)$ **(c)** $(4x - 5)(4x - 5)$ **(d)** $(4x + 5)(4x + 7)$

4. Mr. Rao bought 1-year, ₹ 10000 certificate of deposit that paid interest at an annual rate of 8% compounded semi-annually. The interest received by him on maturity is

(a) ₹ 816 **(b)** ₹ 864 **(c)** ₹ 800 **(d)** ₹ 10816

5. Factorisation of $(lm + l) + m + 1$ is

(a) $(lm + 1)(m + l)$ **(b)** $(lm + m)(l + 1)$ **(c)** $l(m + 1)$ **(d)** $(l + 1)(m + 1)$

6. If $x + y = 11$ and $xy = 24$ then $x^2 + y^2$ is equal to

(a) 121 **(b)** 73 **(c)** 48 **(d)** 169

7. Factorisation of $x^2 - 4x - 12$ is

(a) $(x + 6)(x - 2)$ **(b)** $(x - 6)(x + 2)$ **(c)** $(x - 6)(x - 2)$ **(d)** $(x + 6)(x + 2)$

8. The compound interest on ₹ 5000 at 20% per annum for 1 ½ years compounded half-yearly is

(a) ₹ 6655 **(b)** ₹ 1655 **(c)** ₹ 1500 **(d)** ₹ 1565

9. If $x + \frac{1}{x} = 4$, then $x^4 + \frac{1}{x^4}$ is equal to

(a) 196 **(b)** 194 **(c)** 192 **(d)** 190

10. Which of the following is a factor of $(x + y)^3 - (x^3 + y^3)$?

(a) $x^2 + 2xy + y^2$ **(b)** $x^2 - xy + y^2$ **(c)** xy^2 **(d)** $3xy$

11. If the number of conversion periods ≥ 2, then the compound interest is

(a) less than simple interest **(b)** equal to simple interest

(c) greater than or equal to simple interest **(d)** greater than simple interest

12. Factorisation of $3x^2 + 7x - 6$ is

(a) $(3x - 2)(x + 3)$ **(b)** $(3x + 2)(x - 3)$ **(c)** $(3x - 2)(x - 3)$ **(d)** $(3x + 2)(x + 3)$

13. $\frac{(103)^2 - (97)^2}{200}$ is equal to

(a) 3 **(b)** 4 **(c)** 5 **(d)** 6

14. The factorisation of $x^2 - 4xy + 4y^2$ is

(a) $(x + 2y)(x - 2y)$ **(b)** $(x + 2y)(x + 2y)$ **(c)** $(x - 2y)(x - 2y)$ **(d)** $(2x - y)(2x + y)$

15. The present population of a city is 12,00,000. If it increases at the rate of 8% every year, then the population of the city after 2 years is

(a) 199680 **(b)** 1399680 **(c)** 1500000 **(d)** 1299680

16. If $x^2 + y^2 = 9$ and $xy = 8$ then $x + y$ is equal to

(a) 25 **(b)** 5 **(c)** -5 **(d)** ± 5

17. One of the factors of $(25x^2 - 1) + (1 + 5x^2)$ is

(a) $5 + x$ **(b)** $5 - x$ **(c)** $5x - 1$ **(d)** $10x$

18. If $\frac{x}{y}+\frac{y}{x}=-1$ then the value of x^3-y^3 is equal to

(a) 1 **(b)** – 1 **(c)** 0 **(d)** $\frac{1}{2}$

19. If Sukriti borrows ₹ 8000 for two years at the rate of 10% per annum compound interest, then the amount to be paid by her at the end of two years to clear the debt is

(a) ₹ 8800 **(b)** ₹ 9600 **(c)** ₹ 9680 **(d)** ₹ 102400

20. If $a+b+c=0$, then the value of $a^3+b^3+c^3$ is

(a) 0 **(b)** *abc* **(c)** 2*abc* **(d)** 3*abc*

21. The factorisation of $4x^2+8x+3$ is

(a) $(x+1)(x+3)$ **(b)** $(2x+1)(2x+3)$ **(c)** $(2x+2)(2x+5)$ **(d)** $(2x-1)(2x-3)$

22. If $x-\frac{2}{x}=3$, then $x^3-\frac{8}{x^3}$ is equal to

(a) 27 **(b)** 36 **(c)** 45 **(d)** 54

23. If a man invests ₹ 12000 for two years at the rate of 10% per annum compound interest, then the compound interest earned by him at the end of two years is

(a) ₹ 2400 **(b)** ₹ 2520 **(c)** ₹ 2000 **(d)** ₹ 1800

24. The expression $(a-b)^3+(b-c)^3+(c-a)^3$ can be factorized by

(a) $(a-b)(b-c)(c-a)$ **(b)** $3(a-b)(b-c)(c-a)$

(c) $-3(a-b)(b-c)(c-a)$ **(d)** $(a+b+c)(a^2+b^2+c^2-ab-bc-ca)$

Answers :

1. (c)	**2.** (d)	**3.** (a)	**4.** (a)	**5.** (d)	**6.** (b)
7. (b)	**8.** (b)	**9.** (b)	**10.** (d)	**11.** (d)	**12.** (a)
13. (d)	**14.** (c)	**15.** (b)	**16.** (d)	**17.** (d)	**18.** (c)
19. (c)	**20.** (d)	**21.** (b)	**22.** (c)	**23.** (b)	**24.** (b)