# ALVINO ACADEMICS EXPERT

## REVISION SHEET (2) CH 2 IX

### Class 09 - Mathematics

**Time Allowed: 54 minutes** **Maximum Marks: 50**

1. Factorise: $a^3b - a^2b + 5ab - 5b$ **[2]**
2. Factorise: $64m^3 - 343n^3$ **[2]**
3. Factorise: $9(2a - b)^2 - 4(2a - b) - 13$ **[2]**
4. Expand using suitable identity: $(2x - y + z)^2$ **[2]**
5. If $x^2 + \frac{1}{x^2} = 34$, find $x^4 + \frac{1}{x^4}$ **[2]**
6. Find the value of k if (x - 2) is a factor of polynomial $p(x) = 2x^3 - 6x^2 + 5x + k$. **[2]**
7. By Remainder Theorem find the remainder, when p(x) is divided by g(x), where $p(x) = x^3 - 2x^2 - 4x - 1$, $g(x) = x + 1$ **[2]**
8. Factorize : $(x - y)^3 + (y - z)^3 + (z - x)^3$ **[2]**
9. Use suitable identity to find the product: (3x + 4)(3x - 5) **[2]**
10. Factorize: $a^3 + 8b^3 + 64c^3 - 24abc$ **[2]**
11. Find the remainder when $x^3 - ax^2 + 6x - a$ is divided by$x - a$. **[3]**
12. Factorize the polynomial: **[3]**
    $27 - 125a^3 - 135a + 225a^2$
13. Expand $\left(\frac{1}{2}a - \frac{1}{3}b + 1\right)^2$ **[3]**
14. Factorize: **[3]**
    $8a^3 + b^3 + 12a^2b + 6ab^2$
15. Factorize: $4(x - y)^2 - 12(x - y)(x + y) + 9(x + y)^2$ **[3]**
16. If polynomials $ax^3 + 3x^2 - 13$ and $2x^3 - 5x + a$ when divided by (x - 2) leave the same remainders. Find the values of a. **[3]**
17. For what value of m is $x^3 - 2mx^2 + 16$ divisible by x + 2? **[3]**
18. Factorise: $\frac{3}{2}x^2 - x - \frac{4}{3}$ **[3]**
19. Without actually calculating the cubes, find the value of $(-12)^3 + (7)^3 + (5)^3$ **[3]**
20. If x = 2 is a root of the polynomial $f(x) = 2x^2 - 3x + 7a$, find the value of a. **[3]**