Section A - Each question carries one mark  

1. Evaluate \( \sqrt[4]{\frac{1}{256}} \)

2. The polynomial \( 2x^3 - kx^2 + 7x - 1 \) when divided by \( x - 1 \), leaves the remainder 3. Then find the value of ‘k’.

3. In the given figure \( l \parallel m \), then find the value of ‘x’.

![Diagram showing parallel lines](image)

4. Find the distance of the point \((-4, -3)\) from Y-axis.

Section B - Each question carries two marks  

5. If \( x = 1 + \sqrt{2} \) find the value of \( x - \frac{1}{x} \).

6. Factorise: \( 3x^2 - x - 4 \).

7. If D is a point between E and F such that ED=DF, prove that D is the midpoint of EF.

8. Find the value of x and y in the figure.

![Diagram showing intersecting lines](image)
9. The perimeter of a triangle is 300 cm and its sides are in the ratio 5:12:13. Find its area.

10. If a point P(-2,5) lies in the second quadrant, then what will be the coordinates of a point B opposite to it in third quadrant having equal distance from X-axis.

Section C – Each question carries three marks (10 x 3 = 30)

11. Simplify \([5\left(\frac{1}{8}\right)^{-\frac{1}{3}} + \left(\frac{1}{27}\right)^{-\frac{1}{3}}\)]^{\frac{1}{3}}.

12. Find the value of \(a\) and \(b\), if \(\frac{2+\sqrt{3}}{2-\sqrt{3}} = a+b\sqrt{3}\).

13. Factorise: \((a^2 - 2a)^2 - 23(a^2 - 2a) + 120\).

14. Polynomials \(3x^3 - 5x^2 + kx - 2\) and \(-x^3 - x^2 + 7x + k\) leave the same remainder when divided by \(x + 2\). Find the value of \(k\).

15. In the given figure, prove that \(\angle ADC = \angle A + \angle B + \angle C\).

16. In the given figure, \(B < A\) and \(C < D\). Show that \(AD < BC\).
17. In figure, EF \parallel DQ and AB \parallel CD. Find PDQ, AED and DEF.

18. In figure it is given that AB and CD are two parallel lines intersected by transversal EF. Bisectors of interior angles BMN and DNM on the same side of transversal meet at P. prove that MPN = 90°.

19. Locate the points A(3,4), B(-2,4), C(-2,-2) and D(3,-2) on Cartesian plane. and find the area of the quadrilateral ABCD.

20. The sides of a triangular field are 51 m, 37 m and 20 m. Find the number of rose beds that can be prepared in the field if each rose bed occupies a space of 6 sq.cm.

Section D – Each question carries four marks

21. Simplify : if \( x = \frac{3+\sqrt{2}}{3-\sqrt{2}} \) and \( y = \frac{3-\sqrt{2}}{3+\sqrt{2}} \) find \( x^2 + y^2 \)

22. Locate \( \sqrt{6.5} \) on a number line.

23. Show by long division that \( x - 3 \) is a factor of \( 2x^4 - 3x^3 - 26x^2 - 5x + 6 \).
24. Factorise: \(8(x + y)^3 - 27(x - y)^3\).

25. Find the values of \(a\) and \(b\) so that \((x + 1)\) and \((x - 1)\) are factors of \(x^4 + ax^3 + 2x^2 - 3x + b\).

26. Simplify: \((3x + 4y)^3 - (3x - 4y)^3 - 216x^2y\).

27. If a transversal intersects two lines such that the bisectors of a pair of corresponding angles are parallel, then prove that the two lines are parallel.

28. In figure AD perpendicular CD and CB perpendicular CD. If AQ=BP and DP=CQ. Prove that DAQ=CBP.

29. Prove that sum of three interior angles in a triangle is 180˚.

30. In the given figure, \(BCD = ADC\) and \(ACB = BDA\). Prove that
   (i) \(AD = BC\)  (ii) \(A = B\)

31. In figure, D and E are points on BC such that \(BD = EC\) and \(AD = AE\). Show that \(AB = AC\).