Manipur Board Class 10 2026 Mathematics Question Paper

Time Allowed :3 Hours	**Maximum Marks :**80	**Total questions :**32

General Instructions

Read the following instructions very carefully and strictly follow them:

1. The paper is divided into Section A and Section B.
2. Section A includes objective-type questions.
3. All questions in Section A are compulsory.
4. Section B includes short answer, and long answer type questions.
5. Answers must be written legibly within the word limit.
6. Use of unfair means or electronic devices is prohibited.
7. Follow the correct format and instructions for each section.

Section - A

1. The number of days within which the stock exchange is supposed to resolve dispute at their end is

(A) 10

(B) 15

(C) 20

(D) 30

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2. If $x+1$ is a factor of $p(x)=4x^2+3x+k$, then the value of k is

(A) 8

(B) -8

(C) 1

(D) -1

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3. If one root of the equation $2x^2 - 3x + k = 0$ be reciprocal of the other, then the value of k is

(A) $\frac{3}{2}$

(B) $-\frac{3}{2}$

(C) 3

(D) 2

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4. The sum of the first n terms of the AP whose first term is 1 and common difference is 2 is :

(A) 3n

(B) 2n - 1

(C) n^2

(D) n(n + 1)

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5. Two concentric circles are of radii 6 cm and 10 cm. The length of a chord of the larger circle which touches the smaller circle is

(A) 8 cm

(B) 12 cm

(C) 16 cm

(D) 18 cm

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6. Length of an arc of a sector of a circle with radius r and sectorial angle θ (measured in degrees) is

(A) $\frac{\pi r\theta}{360}$

(B) $\frac{\pi r\theta}{180}$

(C) $\frac{\pi r^2 \theta}{360}$

(D) $\frac{\pi r^2 \theta}{180}$

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7. If $p(x)$ is a polynomial of degree ≥ 1 and a is any real number, then the remainder when $p(x)$ is divided by $x - a$ is

(A) $p(a)$

(B) $p(-a)$

(C) $-p(a)$

(D) $-p(-a)$

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8. A point P is at a distance of 13 cm from the centre of a circle. If the radius of the circle is 5 cm, the length of the tangent from P to the circle is

(A) 12 cm

(B) 13 cm

(C) 15 cm

(D) 18 cm

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9. The volume of the hemisphere of radius r is

(A) $\frac{4}{3}\pi r^3$

(B) $\frac{1}{3}\pi r^3$

(C) $\frac{2}{3}\pi r^3$

(D) $4\pi r^3$

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10. The remainder when $4x^3 + 4x^2 + x - 4$ is divided by $2x - 1$ is

(A) 2

(B) -2

(C) 4

(D) -4

Section - B

11. Solve the quadratic equation $ax^2 + bx + c = 0$, $(a \neq 0)$ by the method of completing square.

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12. Solve graphically:

$$2x + 3y = 5$$

$$5x - 4y + 22 = 0$$

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13. Write the statement of Euclid's Division Lemma.

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14. Write down the quadratic equation whose roots are 2 and -3.

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15. In a right triangle ABC, right angled at B, prove that $\sin A = \cos(90^\circ - A)$ and $\cos A = \sin(90^\circ - A)$.

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16. Prove that the area of a sector of sectorial angle θ and radius r is $\frac{\pi r^2 \theta}{360}$.

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17. Write the full form of SCORES.

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18. What is the first term of the quotient when $2x^3 + x^2 - 3x + 5$ is divided by $1 - 3x + x^2$?

19. How many tangents can be drawn to a circle through a point lying outside the circle?

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20. Write down the formula to find the area of a triangle whose vertices are (x_1, y_1), (x_2, y_2) and (x_3, y_3).

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21. State and prove Basic Proportionality Theorem.

OR,

Prove that the ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.

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22. Find the area of a circle whose radius is 7 cm.

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23. Define mode of a frequency distribution.

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24. Show that $a^3 + b^3 + c^3 - 3abc = \frac{1}{2}(a+b+c)\left\{(a-b)^2 + (b-c)^2 + (c-a)^2\right\}$.

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25. The ratio of incomes of two persons is $9 : 7$ **and the ratio of their expenditures is** $4 : 3$**. If each of them saves Rs.** 5000 **per month, find their monthly incomes.**

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26. If x, y, z **are real numbers,** $x \neq 0$**, and** $xy = xz$**, prove that** $y = z$**.**

27. A vertical tower stands on a horizontal plane and is surmounted by a vertical flagstaff of height h. At a point on the plane, the angle of elevation of the bottom of the flagstaff is α and that of the top of the flagstaff is β. Prove that the height of the tower is $\frac{h \tan \alpha}{\tan \beta - \tan \alpha}$.

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28. A metallic sphere of radius 9 cm is melted and recast to form a cylinder of radius 3 cm. Find the curved surface area of the cylinder.

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29. Prove that $x^n - y^n$ is divisible by $x + y$ only when n is even.

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30. If $\cos A = \frac{3}{5}$, calculate $\sin A$ and $\tan A$.

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31. Show that the square of an odd integer is of the form $8k + 1$.

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32. Find the area of the quadrilateral whose vertices are $(1, 1)$, $(3, 4)$, $(5, -2)$ and $(4, -7)$ taken in order.

OR,

If three consecutive vertices of a parallelogram are $A(1, -2)$, $B(3, 6)$ and $C(5, 10)$, find its fourth vertex.
