



MATHEMATICS TALENT HUNT 2025

Organized by : The Pi Group of Mathematics (TPGM), Cooch Behar

Registration No. – S0031696 of 2022-23

Class – VIII

Full Mark : 100

Time : 1 Hr 30 mins.

Instructions to the Candidates

1. Candidates must write their Name, Class, Roll No. allotted for the exam and Name of their School correctly in the specific places of the answer sheet.
2. There are 50 questions of 2 marks each. Four possible options of answer are given for each question.
3. Candidates should choose the correct option and completely darken the circle with that option written in it in the answer sheet (OMR). For example, say the correct option for Question Number 10 is (c), then the candidate should darken the circle completely with 'c' written in it against the number 10 of the answer sheet. Use black ball pen or pencil for darkening.
4. There is no negative marking.

1. Which of the following number is divisible by 36 ?

- (a) 8918380568 (b) 9475381628 (c) 9474494204 (d) 9475381620

2. If $100a + 10b + c = 456$ (where a,b,c are digits between 0 to 9) then, the value of $(a+b-c)$ is

- (a) 3 (b) 9 (c) 11 (d) 14

3. If the perimeter of a rectangle be 24 cm then, maximum possible value of the area of the rectangle is

- (a) 64 sq. cm (b) 20 sq. cm (c) 36 sq. cm (d) 44 sq. cm

4. If $1^2 + 2^2 + 3^2 + \dots + 102^2 = k$ then, $2^2 + 4^2 + 6^2 + \dots + 204^2 = ?$

- (a) $2k$ (b) k^2 (c) $4k$ (d) $2k^2$

5. Minimum value of $4a^2 + \frac{4}{a^2}$ is

- (a) 4 (b) 6 (c) 8 (d) 16

6. Which of the following value of x satisfy the equation $3^{9x} - 3^{9x-4} = 240$

- (a) $\frac{4}{9}$ (b) $\frac{1}{3}$ (c) $\frac{2}{9}$ (d) $\frac{5}{9}$

7. If $(x, 180, 195)$ is a Pythagorean Triplet then x is

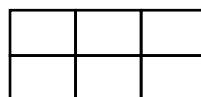
- (a) 75 (b) 80 (c) 65 (d) 95

8. If $x + 3y = 15$ and $2y + 3z = 3$ then $2x - 9z$ equals

- (a) 18 (b) 33 (c) 30 (d) 21

9. Number of rectangles in the adjacent diagram is

- (a) 8 (b) 12
(c) 16 (d) 18



10. The value of $\{(1024)^{10}\}^{\frac{1}{100}}$ is equal to -

- (a) 32 (b) 16 (c) 8 (d) 2

11. The cube root of $216 \times 1728 \times 125$ is

- (a) 72 (b) 60 (c) 350 (d) 360

12. Let $E = \{x : 2x^2 - 31x + 15 = 0\}$ and $F = \{\frac{1}{2}, 18\}$ then, $E \cap F$ is

- (a) $\{\frac{1}{2}, 15, 18\}$ (b) $\{\frac{1}{2}\}$ (c) $\{\frac{1}{2}, 18\}$ (d) $\varnothing$

13. Number of non-null proper subset of the set $\{a, b, c\}$ is

- (a) 8 (b) 7 (c) 6 (d) 1

14. If $x = \frac{1}{1-y}$ and $y = \frac{1}{1-z}$ then, $z = ?$

- (a) $\frac{1}{1-x}$ (b) $\frac{1}{x-1}$ (c) $\frac{x}{x-1}$ (d) None of these

15. Sum of the interior angles of a polygon with n side is

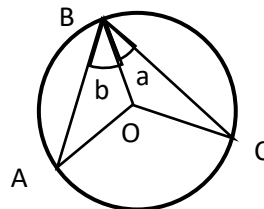
- (a) $(2n - 2) \times 90^\circ$ (b) $(2n - 4) \times 180^\circ$ (c) $(n - 2) \times 180^\circ$ (d) None of these

16. If seven points on a circle are connected to each other then the number of chords obtained is

- (a) 21 (b) 14 (c) 28 (d) 17

17. If O be the centre of the circle in the given figure then, $\angle AOC = ?$

- (a) $a + 2b$ (b) $2a + b$
(c) $2a + 2b$ (d) None of these



18. If a rhombus has two diagonal having length 4 cm and 6 cm then each of its sides is of length

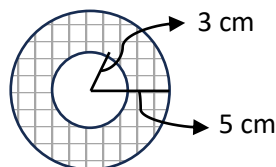
- (a) $\sqrt{52}$ cm (b) $\sqrt{13}$ cm (c) 5 cm (d) 5.6 cm

19. How many nets are possible of a cube

- (a) 7 (b) 8 (c) 9 (d) 11

20. Area of the shaded region is

- (a) 4π sq cm (b) 16π sq cm
(c) 2π sq cm (d) 9π sq cm



21. The remainder when $2x^2 + 3x - 5$ is divided by $x - 2$, is

- (a) 14 (b) 9 (c) 19 (d) 0

22. Co-efficient of x^5 in the expression $(x - 1)(x - 2)(x - 3)(x - 4)(x - 5)(x - 6)$ is

- (a) 21 (b) -21 (c) 25 (d) -35

23. All the points at a distance 3 unit from a fixed point lies on a

- (a) square (b) hexagon (c) circle (d) sphere

24. If length and area of a rectangle are respectively $(x + 3)$ unit and $(x^2 - 2x - 15)$ sq. unit then, breadth of the rectangle is

- (a) $(x - 2)$ unit (b) $(x - 3)$ unit (c) $(x - 5)$ unit (d) $(x - 7)$ unit

25. Number of edges in a prism with hexagonal base is

- (a) 24 (b) 18 (c) 16 (d) 12

26. ABC is a triangle such that $AB = AC$ and AD bisects $\angle BAC$, where D lies on BC. Then $\triangle ABD \cong \triangle ACD$ by the rule

- (a) S-S-S (b) A-S-A (c) S-A-S (d) R-H-S

27. A triangle has sides of lengths 10 cm, 10 cm and 12 cm. The area of the triangle is

- (a) 48 sq. cm (b) 96 sq. cm (c) 60 sq. cm (d) 72 sq. cm

28. A polyhedron have 8 faces and 12 edges then number of vertices of polyhedron is

- (a) 6 (b) 8 (c) 9 (d) 10

29. The length, breadth and height of a cuboid are in the ratio 6 : 5 : 3 then, ratio of area of the faces perpendicular to length, breadth and height respectively is

- (a) 6 : 5 : 3 (b) 15 : 18 : 26 (c) 5 : 6 : 10 (d) None of these

30. Number of solution of the inequation $8 - 2x \geq x - 5$ ($x \in N$) is

- (a) 3 (b) 4 (c) 5 (d) infinite

31. Number of four lettered words that can be formed using the letters of the words "ROOT" is

- (a) 24 (b) 12 (c) 16 (d) 6

32. If $3 * 4 = -5$ and $2 * 4 = -2$ then, $1 * 7$ is

- (a) 1 (b) -1 (c) -3 (d) 6

33. In right angled triangle ABC, $\angle B = 90^\circ$ and $\angle C = 30^\circ$. If $AB = 1$ cm then BC is

- (a) 2 cm (b) $\sqrt{3}$ cm (c) 3 cm (d) $\sqrt{6}$ cm

34. If each side of a cube is increased in the ratio 2 : 3 then, the increase in its total surface area is

- (a) 225% (b) 125% (c) 50% (d) 150%

35. The amount of compound interest on ₹ 8,000 in $1\frac{1}{2}$ years at 10% per year compounded half-yearly is

- (a) ₹ 9,261 (b) ₹ 1,261 (c) ₹ 1,361 (d) None of these

36. If chocolates are equally distributed among 6 students, each gets 10. To how many students it should be distributed such that each gets 12 chocolates?

- (a) 5 (b) 20 (c) 10 (d) None of these

37. Age of a father (x year) and his son (y year) changes with time such that

- (a) $x \propto y$ (b) $x \propto \frac{1}{y}$ (c) $x + y = \text{constant}$ (d) $x - y = \text{constant}$

38. In a particular time of a of a certain day the ratio of height of a tree and its shadow is 2 : 3. If the length of the shadow is 18 m then, the length of the tree is

- (a) 27 m (b) 12 m (c) 18 m (d) 24 m

39. If A be the area and P be the circumference of a circle with radius " r " then, which of the following is correct?

- (a) $A \propto r$ (b) $P \propto r^2$ (c) $A^2 \propto r^2$ (d) $A \propto r^2$

40. x and y are two variables such that

X	4	9	36	100	225
y	15	10	5	3	2

then,

- (a) $x \propto y$ (b) $x \propto \frac{1}{y}$ (c) $x^2 \propto \frac{1}{y}$ (d) $x \propto \frac{1}{y^2}$

41. We use ten digits from 0 to 9 to represent any natural number. If instead we use eight digits from 0 to 7 then, considering place values the number thirty five will be written as
 (a) 35 (b) 43 (c) 34 (d) 53
42. Lines of symmetry of a regular hexagon is
 (a) 3 (b) 4 (c) 5 (d) 6
43. The sixth number in the series 2, 6, 12, 20, 30, ... is
 (a) 42 (b) 40 (c) 38 (d) 46
44. $1 + 3 + 5 + 7 + \dots$ up to 25 terms equals
 (a) 2401 (b) 725 (c) 676 (d) 625
45. If a dice is thrown three times, find the number of outcomes such that sum of the three numbers are less than 6 is
 (a) 9 (b) 10 (c) 11 (d) 12
46. The value of x if $\frac{x+23}{5} + 5(x-3) = \frac{x+3}{2} + 3x$ is
 (a) 12 (b) 10 (c) 8 (d) 7
47. $\{(57)^3 + (64)^3\}$ is divisible by
 (a) 119 (b) 120 (c) 121 (d) 123
48. Arrange the following great mathematicians according to chronology :
i. Albert Einstein ii. Archimedes iii. Al-Khwarizmi iv. Brahmagupta
 (a) ii, iv, iii, i (b) ii, i, iii, iv (c) ii, iv, i, ii (d) iv, ii, iii, i
49. Pick the odd one out:
 (a) ABDG (b) HIKN (c) ZACF (d) MNPO
50. If $\bar{a}$ = the remainder when a is divided by 5 then, $\overline{26} + \overline{(7+2)}$ is
 (a) 30 (b) 0 (c) 10 (d) 5
