

43. The temperature of a particular place during a day is recorded as  $48^{\circ}\text{C}$  at 3:00p.m. The temperature decreases by  $2^{\circ}\text{C}$  after half an hour. Find the temperature of the particular place at 9:00p.m.

- a)  $28^{\circ}\text{C}$       b)  $24^{\circ}\text{C}$       c)  $32^{\circ}\text{C}$       d)  $26^{\circ}\text{C}$

44. The sum of 5 consecutive even numbers is 140. Find the greatest number amongst them.

- a) 24      b) 28      c) 31      d) 32

45. The present age of Karan is 58 years and that of Vikas is 14 years. In how many years will Karan be thrice as old as Vikas ?

- a) 6 years      b) 10 years      c) 8 years      d) 12 years

46. Two numbers are in the ratio 5 : 7. If 18 is subtracted from each number, then their ratio becomes 8 : 13. Find the sum of the numbers.

- a) 120      b) 160      c) 170      d) 190

47. Which of the following interchanges of signs would make the given equation true ?  
 $16 \div 2 + 9 \times 12 - 3 = 81$

- a)  $\times$  and  $\div$       b)  $-$  and  $\div$       c)  $\times$  and  $+$       d)  $+$  and  $-$

48. Which of the following words CANNOT be formed by using the letters of the given word ?

CONCENTRATE

- a) TREAT      b) TRAIN      c) CONCERN      d) CENTRE

49. In a division, the divisor is 12 times the quotient and 5 times the remainder. If the remainder is 48, then dividend is -

- a) 240      b) 576      c) 4800      d) 4848

50. The size of a red blood cell is 0.000007m and the size of a plant cell is 0.00001275m. Find the ratio of the size of red blood cell to that of plant cell.

- a) 13 : 56      b) 28 : 51      c) 31 : 39      d) 22 : 31



# MATH TALENT HUNT - 2023

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

Registration No. - S0031696 of 2022-23

**Class - VIII**

**Full Marks - 100**

**Time - 2 Hours**

## Instructions

- There are 50 questions of marks 2 each
- Put tick ( $\checkmark$ ) mark on the correct alternative against each question in your answer sheet.
- There is no negative marking.

1. Which of the following is not a rational number ?

- a)  $\frac{0}{3}$       b)  $\frac{5}{0}$       c)  $\frac{7}{1}$       d)  $\frac{1}{7}$

2. The sum of two number is 81. if one number is  $(\frac{4}{5})$ th of the other, then the number are

- a) 54, 27      b) 45, 36      c) 42, 39      d) 58, 23

3. What should be subtracted from  $(1 + \frac{3}{10})$  to get  $\frac{5}{6}$  ?

- a)  $\frac{9}{20}$       b)  $\frac{7}{5}$       c)  $\frac{2}{7}$       d)  $\frac{5}{8}$

4. A teacher has 54 books, after giving three books to each student, he is left with 9 books. How many students are there in the class ?

- a) 20      b) 18      c) 15      d) 25

5. A two-digit number is less than 20. The sum of the digits is double that their product. What is the number ?

- a) 12      b) 15      c) 13      d) 11

6. The number of sides of a regular polygon whose each exterior angle has a measure of  $60^{\circ}$  is -----

- a) 7      b) 6      c) 11      d) 9

7. ABCD is a rhombus in which the attitude from D to side AB bisects AB. Then  $\angle A$  And  $\angle B$  respectively are -

- a)  $60^{\circ}$ ,  $120^{\circ}$       b)  $120^{\circ}$ ,  $60^{\circ}$       c)  $80^{\circ}$ ,  $100^{\circ}$       d)  $100^{\circ}$ ,  $80^{\circ}$

8. The angles of a quadrilateral are in the ratio 3 : 7 : 6 : 4. The sum of the greatest and the smallest angle is

- a)  $120^{\circ}$       b)  $70^{\circ}$       c)  $180^{\circ}$       d)  $95^{\circ}$

9. In a survey of 500 students, it is found that 380 like cricket while the rest dislike it. From these students, one is chosen at random. The probability that the chosen student dislike cricket is -

- a)  $\frac{9}{25}$       b)  $\frac{6}{25}$       c)  $\frac{3}{25}$       d)  $\frac{6}{25}$

10. The mid-value of a class-interval is called its

- A) Class-limit      b) Class-mark      c) Frequency      d) Class-interval

11. If  $\sqrt{2 + \sqrt{x}} = 3$ , then  $x =$  -----.

- a) 1      b)  $\sqrt{7}$       c) 7      d) 49

12. If the three numbers are in the ratio 3:4:7, So that the sum of their squares is 1184. Find the numbers respectively.

- a) 12, 16, 28      b) 28, 12, 16      c) 28, 16, 12      d) 16, 12, 28

13. A teacher arranges his students in rows to form a square. He finds that in doing so, 45 students are left out. If the total number of students be 4945, then find the number of students in each row.

- a) 70                      b) 60                      c) 50                      d) 45

14. How many cubes of side 3cm can be cut from a cube of side 9cm ?

- a) 7                      b) 15                      c) 27                      d) 14

15. The cube of a two digit number will contain -

- a) 4 digit                      b) 5 digit                      c) 6 digit                      d) 4, 5 or 6 digit

16. Atul made a cube of plasticine. Length, breadth and height of the cuboid are 25cm, 25cm and 50cm. How many minimum such cuboids he needs to make a perfect cube ?

- a) 4                      b) 20                      c) 12                      d) 25

17.  $(0.5\% \text{ of } 250) + (0.8\% \text{ of } 120) = ?$

- a) 1.85                      b) 2.21                      c) 1.92                      d) 2.42

18. If x% of y is 100 and y% of z is 200, then

- a)  $z = 3x$                       b)  $z = \frac{x}{4}$                       c)  $z = 2x$                       d)  $z = \frac{x}{3}$

19. A book was sold for Rs 27.50 with a profit of 10% . If it was sold for Rs. 25.75, then what would have been the percentage of profit or loss ?

- a) Loss, 3%                      b) Profit, 2%                      c) profit, 3%                      d) loss, 2%

20. If  $3x+4y=18$  and  $xy=6$ , then find the value of  $9x^2+16y^2$ .

- a) 180                      b) 144                      c) 324                      d) 170

21. If  $x^2 + \frac{1}{x^2} = 7$ , then find the value of  $x + \frac{1}{x}$

- a) 3                      b)  $\sqrt{53}$                       c)  $\sqrt{61}$                       d)  $\sqrt{63}$

22. What should be added to  $x^4 - 3x^2 + 7x - 5$  to get  $2x^4 + 6x - 4$  ?

- a)  $x^4 + 4x^2 - 31x + 2$                       b)  $x^4 + 2x^2 + 4x + 1$   
c)  $x^3 + 3x^2 - 4x + 31$                       d)  $x^4 + 3x^2 - x + 1$

23. Number of faces, vertices edge in the rectangular prism are respectively -

- a) 4, 6, 8                      b) 7, 5, 12                      c) 6, 5, 7                      d) 6, 8, 12

24. The ratio of areas of two squares, if diagonal of one is double the diagonal of the other, is -

- a) 3 : 2                      b) 4 : 1                      c) 3 : 1                      d) 4 : 3

25. The edges of a cuboid are in the ratio 1:2:3 and its volume is 1296cu m. Find its length, breadth and height.

- a) 4m., 8m., 12m.,                      b) 5m., 10m., 15m.  
c) 6m., 12m., 18m.                      d) None of these

26. A room has a length 8m. and breadth 6m. If the cost of painting its four walls at the rate of Rs. 80 per m<sup>2</sup> is Rs. 11200, find the height of the room.

- a) 5m                      b) 6m.                      c) 8m.                      d) 10m.

27. The value of  $\frac{2^{2001} + 2^{1999}}{2^{2000} - 2^{1998}}$  is -

- a) 2                      b) 10/3                      c)  $2^{1000+1}$                       d) 10

28. When simplified,  $(x^1 + y^1)^{-1}$  is equal to

- a)  $x + y$                       b)  $\frac{xy}{x+y}$                       c)  $xy$                       d)  $\frac{1}{xy}$

29. Which of the following values are equal ?

- P.  $1^4$                       Q.  $4^0$   
R.  $0^4$                       S.  $4^1$

- a) P and Q                      b) Q and R                      c) P and R                      d) P and S

30. The cell of bacteria doubles itself after every 1 hour. How many cells will there be after 8 hours ?

- a) 200 times of the original                      c)  $2^8$  times of the original  
c)  $2^{10}$  times of the original                      d)  $2^6$  times of the original

31. If x and y vary inversely as each other, and x = 12 when y = 10. Find y When x = 20.

- a) 5                      b) 8                      c) 9                      d) 6

32. 56men can do a piece of work in 42days. How many men will do the same work in 14days ?

- a) 140                      b) 170                      c) 168                      D) 132

33. In 15days, the earth picks up  $1.2 \times 10^8$  kg of dust from the atmosphere. In how many days it will pick up  $4.8 \times 10^8$  kg of dust ?

- a) 50                      b) 40                      c) 60                      d) 100

34. The factors of  $\sqrt{3}x^2 + 11x + 6\sqrt{3}$  are -

- a)  $(x - 3\sqrt{3})(\sqrt{3}x + 2)$                       b)  $(x - 3\sqrt{3})(\sqrt{3}x - 2)$   
c)  $(x + 3\sqrt{3})(\sqrt{3}x - 2)$                       d)  $(x + 3\sqrt{3})(\sqrt{3}x + 2)$

35. (-8, 0) lies on -

- a) Positive x-axis                      b) Negative x-axis  
c) Positive y-axis                      d) Negative y-axis

36. The point (5, 2) is at a distance of ----- unit from y-axis.

- a) 2                      b) 5                      c) 3                      d) 7

37. The number  $(10^n - 1)$  is divisible by 11 for ----- .

- a)  $n \in \mathbb{N}$                       b) odd values of n  
c) Even values of n                      d) n is the multiple of 11

38. The largest natural number by which the product of three consecutive even natural numbers is always divisible, is -

- a) 16                      b) 24                      c) 48                      d) 96

39. There is a certain relationship between the words on the either side of :: . Select a word from the options which will replace the '?' .

AMT : COV :: LUT : ?

- a) MUV                      b) NWV                      c) MVU                      d) NWU

40. If BEAUTY is written as CFBTSX, then how will FLOWER be coded in that language ?

- a) EKNVDQ                      b) EKNXFS                      c) GMPVDQ                      d) GMPXFS

41. A rat runs 13m. towards South-East. Then it runs 4m. towards South. Then, it turns right and runs 5m., again it turns right and runs 4m. How far is rat now from the starting position ?

- a) 14m                      b) 13m                      c) 12m                      d) 6m

42. Which of the following rational numbers does not lie on the number line between the numbers  $\frac{4}{15}$  and  $\frac{2}{3}$  ?

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