Bhavan's Tripura Vidyamandir

2nd Terminal Examination : (2024 – 2025)

Class:-8 **Subject: Mathematics**

Time: - 3 hours Total: - 50 Marks

Name of the student: Roll: Sec:

General Instruction:

- **Section A** contains 5 questions (1 to 15) each carries 1 mark
- **Section B** contains 1 case-study (15 to 20) each carries 1 mark
- **Section C** contains 10 questions (21 to 30) each carries 2 marks
- **Section D** contains 8 questions (31 to 38) each carries 3 marks
- **Section E** contains 4 questions (39 to 42) each carries 4 marks

Section A

1. Which of the following is a perfect square?
   a) 79 b) 81 c) 47 d) 30
2. Conversion of the ratio 3 : 5 into percentage is
   a) 80 % b) 75 % c) 65 % d) 60%
3. $1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19$ is equal to the square of
   a)17 b) 9 c) 81 d) 13
4. $28x^4 \div 56x$
   a) $\frac{x}{2}$ b) $\frac{x^3}{2}$ c) $\frac{x^2}{2}$ d) $\frac{x^4}{2}$
5. The cube root of 216 is
   a) 5 b) 6 c) 8 d) 14
6. Numbers obtained when a number is multiplied by itself three times is knows as
   a) Square numbers b) Cube root c) Square root d) Cube numbers
7. The formula for finding the area of the trapezium
   a) base × height b) $\frac{1}{2}$ × (sum of parallel side) × height
   c) length × breadth d) $\frac{1}{2}$ × product of diagonals
8. Find the lateral surface area of cube whose sides are 8 cm.
   a) 256 cm^2 b) 216cm^2 c) 376 cm^2 d) 525 cm^2
9. The cost price of an article is ₹ 500 and selling price is ₹ 550. The gain percentage is
   a) 10 % b) 20% c) 30% d) 40%
10. The common factor of the terms $14pq, 28p^2q^2$ is
    a) $14p^2q$ b) $14pq^2$ c) $14p^2q^2$ d) 14pq
11. A graph which displays data that changes continuously over period of times knowns as
    a) Bar graph b) Line graph c) Pie – graph d) Histogram
12. The point (4,3) lies _____ units from x-axis.
    a) 7 b) 4 c) 3 d) −4

13. The ratio of 5 m to 10 km is

a) 1:2 b) 1:20 c) 1:200 d) 1:2000

14. $(a + b)(a - b) =$

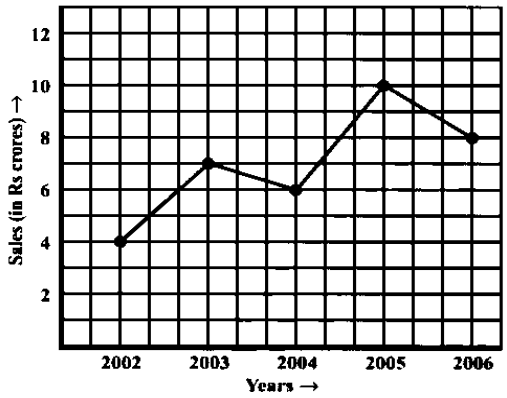
a) $(a + b)^2$ b) $(a - b)^2$ c) $a^2 - b^2$ d) $a^2 + b^2$

15. What percentage of 40 cm is 12 cm?

a) 30 % b) 40 % c) 50 % d) 60%

Section B

The graph shows the yearly sales figure for manufacturing company, on the basis of given information in graph answer the following questions.



16. What was the sales in 2002?

a) 4 crore b) 6 crore
c) 2 crore d) 5 crore

17. What was the sales in 2005?

a) 6 crore b) 4 crore
c) 10 crore d) 8 crore

18. Compute the difference between the sales in 2002 & 2005.

a) 6 crore b) 4 crore c) 5 crore d) 8 crore

19. Compute the difference between the sales in 2004 & 2005.

a) 3 crore b) 2 crore c) 4 crore d) 5 crore

20. In which year was there the greatest difference between the sales as compared to its previous year?

a) 2004 & 2003 b) 2005 & 2004 c) 2004 & 2003 d) 2003 & 2002

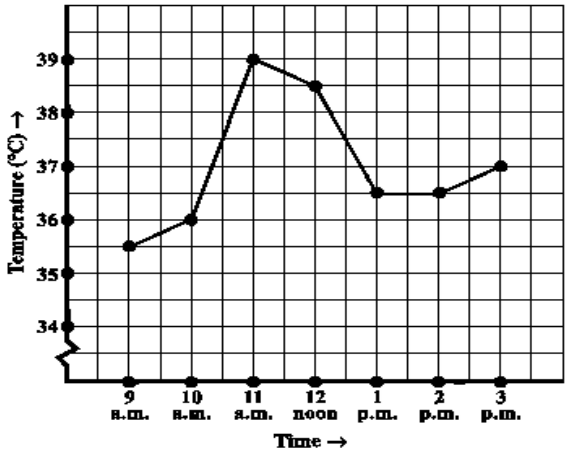
Section C

21. Find the height of a cuboid whose base area is 180 cm^2 and volume is 600 cm^3?
22. Find the side of the cube whose surface area is 600 cm^2.
23. Factorize the expression $6xy - 4y + 6 - 9x$.
24. Find the common factor of $10pq, 20qr, 30rp$.
25. After all faces of cube are painted, the cube is cut into 64 small cubes of equal dimensions. How many small cubes have no face painted and 1 face painted?
26. 72% of 25 students are interested in mathematics. How many are interested in mathematics?
27. Is 53240 a perfect cube? If not, then by which smallest natural number should 53240 be divided so that the quotient is a perfect cube?
28. Find the square roots of 100 by the method of repeated subtraction.
29. Find the cube root of 4913.
30. i) What is the coordinate of the origin?

    ii) Name the two axes in a graph.

Section D

31. Factorise the expression and divide them as directed $5pq\,(p^2 - q^2) \div 2p\,(p + q)$.
32. An article was purchased for `1239 including GST of 18%. Find the price of the article before GST was added?
33. A gardener has 1000 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. Find the minimum number of plants he needs more for this.
34. A milk tank is in the form of cylinder whose radius is 1.5 m and length is 7 m. Find the quantity of milk in litres that can be stored in the tank?
35. Factorise the expression $p^2 + 6p - 16$.
36. The following graph shows the temperature of a patient in a hospital records every hour.



    a. What was the patient's temperature at 1p.m.?
    b. When was the patient's temperature 38.5°C?
    c. The patient's temperature was the same two times during the period given. What were these two times?
37. Find the area of a rhombus whose side is 5 cm and whose altitude is 4.8 cm. If one of its diagonals is 8 cm long, find the length of the other diagonal.
38. **True or False-**

    a) The ordinate of a point is its distance from the Y-axis.
    b) A point in which x coordinate is zero and y- coordinate is non zero will lie on the x axis.
    c) A line graph can also be a whole unbroken line.

Section E

39. A road roller takes 750 complete revolutions to move once over to level of road. Find the area of the road if the diameter of a road roller is 84cm and length is 1m.
40. Factorise – i) $(l + m)^2 - (l - m)^2$ ii) $5y^2 - 20y - 8z + 2yz$
41. i) Find the square root of 576 by using long division method.
    ii) Find the length of the side of a square whose area is $441m^2$.
42. Draw the graphs for the following tables of values, with suitable scales on the axes.

Time (in hours)	6 a.m.	7 a.m.	8 a.m.	9 a.m.
Distances (in km)	40	80	120	160

    i. How much distance did the car cover during the period 7.30 a.m. to 8 a.m?

ii. What was the time when the car had covered a distance of 100 km since it's start?