Class : 8	Subject : Mathematics	Marks : 50 Time : 2 Hours 30 Min

Information to be filled by the Student

Name of the Student : _____

Student SATS No : ☐☐☐☐☐☐☐☐☐☐ **Signature of the Student :** _____

Information to be filled by the Room Invigilator

School DISE Code : ☐☐☐☐☐☐☐☐☐☐☐

School Name : _____

Cluster : _____ **Block :** _____ **District :** _____

School Type : Govt. ☐   **Aided** ☐   **Un-aided** ☐

(Put "✓" mark for applicable information)

Signature of the Room Invigilator : _____

Information to be filled by the Evaluator at the time of evaluation

Question Number	Obtained marks	Question Number	Obtained marks	Question Number	Obtained marks
1		11		21	
2		12		22	
3		13		23	
4		14		24	
5		15		25	
6		16		26	
7		17		27	
8		18		28	
9		19		29	
10		20		30	
-		-		31	
Total marks		Total marks		Total marks	
				Grand Total	

Total marks obtained (in words) : _____

Signature of the Evaluator : _____

I. **Four alternatives are given for each of the following questions / incomplete statements. Choose the appropriate one and write along with the alphabets.**

16 x 1 = 16

1. The rational number that does not have a reciprocal is

   A.   -1   B.   0   C. $\dfrac{3}{5}$ D. 1

   Answer: ☐ _____

2. The operation that is not closed for rational numbers is

   A. Addition   B. Subtraction

   C. Multiplication   D. Division

   Answer: ☐ _____

3. Unit digit of the square of 169 is

   A.   1   B.   3   C.   6   D. 9

   Answer: ☐ _____

4. A linear equation in one variable among the following is

   A. $x^2 + 2x = 8$ B. $x + x^3 = -6$

   C. $\dfrac{5}{3}x + \dfrac{7}{5} = \dfrac{2}{7}$ D. $\dfrac{5}{x} + \dfrac{x}{3} = \dfrac{5}{7}$

   Answer: ☐ _____

5. One of the like term of 7xy is

   A. $-\dfrac{2}{3}$ xy

   B. 7 + x + y

   C. -7x + y

   D. 7 + xy

   Answer: _____

6. If x and y are in direct proportion, then for some non-zero real constant k,

   A. xy = k

   B. x + y = k

   C. $\dfrac{x}{y}$ = k

   D. x - y = k

   Answer: _____

7. One or more outcomes of a random experiment make

   A. an experiment

   B. chance

   C. a trial

   D. an event

   Answer: _____

8. A nine sided polygon is called

   A. heptagon

   B. nonagon

   C. octagon

   D. decagon

   Answer: _____

9. With the usual notations, Euler's formula for a polyhedron is

    A. $F + E = V + 2$ B. $F + E = V - 2$

    C. $F + V = E + 2$ D. $F + V = E - 2$

Answer: ☐ _____

10. Among these numbers, 108 is completely divisible by

    A. 5   B. 11   C. 7   D. 9

Answer: ☐ _____

11. Usual form of $100 \times a + 10 \times c + b$ is

    A. $\overline{abc}$ B. $\overline{acb}$

    C. $111\overline{abc}$ D. $111\overline{acb}$

Answer: ☐ _____

12. Perfect cube among the following is

    A. 1728   B. 827

    C. 888   D. 2700

Answer: ☐ _____

13. Standard form (Scientific notation) of 0.000003 is

    A. 3×10^6 B. 3×10^{-6}

    C. 3×10^{-5} D. 3×10^5

Answer: ☐ _____

14. Percentage form of 3:4 is

    A. 75%   B. $\dfrac{3}{4}$ %

    C. 34%   D. 12%

Answer: ☐ _____

15. The data that changes continuously over periods of time can be displayed by

    A. pictograph   B. bargraph

    C. line graph   D. circle graph

Answer: ☐ _____

16. A die marked with 1, 2, 3, 4, 5, 6 on its faces (one number on on face) is thrown once. The probability of getting the outcome '2' is

    A. 1   B. $\dfrac{1}{2}$ C. $\dfrac{1}{3}$ D. $\dfrac{1}{6}$

Answer: ☐ _____

II. Answer the following questions $\qquad$ **4 x 1 = 4**

17. How many natural numbers lie between 11^2 and 12^2?

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18. Observe the adjacent figure and write,

   (i)   Coordinates of point K

   (ii) Point whose coordinates are (2, 0)

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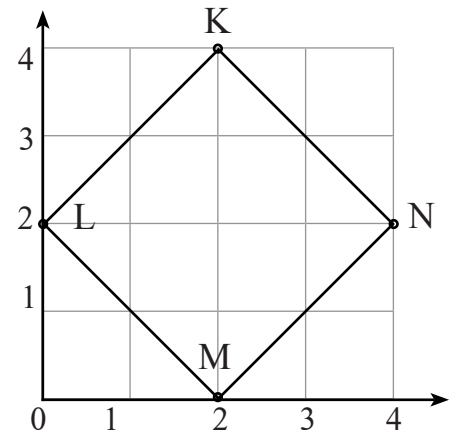
19. Write the formula used to find total surface area (in sq.units) of a cuboid, whose length, breadth and height are 'l' unit, 'b' unit and 'h' unit respectively.

_____

20. In the coordinate system, where does a point whose x-coordinate is zero and y-coordinate is non-zero lie?

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III. Answer the following questions $6 \times 2 = 12$

21. 24 years ago, ratio of ages of Rama and Shashi was 4:5. Now, this ration is 8:9. Find their ages 24 years ago.

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22. By prime factorisation method, find the cuberoot of 2744

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23. Subtract $3 - 7x + 5x^2$ from $7x^2 - 4x + 2$

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24. Divide $(5y^3 - 125y)$ by $(y + 5)$ by factorising the expressions.

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25. Find the sum of the interior angles of a 10 sided convex polygon.

26. 6 Identical pipes are required to fill a tank in 1 hour 20 minutes. How long will it take if only 5 pipes of same type are used?

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IV. Answer the following questions   3 x 3 = 9

27. Find the smallest perfect square number that is divisible by 6, 8 and 18.

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28. Suvarna purchased a watch for ₹1460. After few months, she spent ₹340 for its repair and sold it at a loss of 8 percent. Find its selling price and hence the loss incurred by her.

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29. Construct the quadrilateral FOUR with FO = 5.5cm, OU = 4cm, UR = 5cm, RF = 4.5cm and OR = 6.5cm.

V. Answer the following question   **1 x 4 = 4**

30. Length and breadth of a rectangular garden are 30m and 22m respectively. Find the total cost of constructing a path of uniform width 1.5m around and outside this garden at the rate of ₹150 per square metre.

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VI. Answer the following question   1 x 5 = 5

31. Shweta spends her time during a day for differnt activities as follows.

Activity	School	Home Work	Play	Sleep	Others
Time (in hours)	6	4	3	8	3

Draw a Pie chart for this data.