SUMMATIVE ASSESSMENT – THIRD TERM

MATHEMATICS

Max. Marks: 100

Std - VIII

Time: 2:30 Hrs

Name of the School:	**Name of the Student:**
_____	_____
Place:	**Roll No.:**
_____	_____

I. Choose the correct answer: **10 × 1 = 10**

1. The square root of the smallest 3-digit number is _____.
   (a) 13 (b) 10 (c) 9
2. If $(\frac{m}{n})^{1-5y} = (\frac{n}{m})^{1/4}$ then y = _____.
   (a) 4^{-1} (b) 2^{-1} (c) 3^{-1}
3. 6 men complete work in 10 days. 12 men will complete it in _____ days.
   (a) 20 (b) 18 (c) 5
4. *a* and *b* vary inversely. *a* is 5 when *b* is 24. When *a* is 15, *b* will be _____.
   (a) 12 (b) 8 (c) 20
5. 10 m/s = _____ km/hr.
   (a) 36 (b) 18 (c) 40
6. The three medians of the triangle intersect at the _____.
   (a) centroid (b) orthocenter (c) incenter
7. The three perpendicular bisectors of a triangle intersect at the _____.
   (a) incenter (b) centroid (c) orthocenter
8. When buying a packed edible item, one should check _____.
   (a) the expiry date (b) the colour of the packing meterial
   (c) the location of the shop
9. Before buying a product, a smart customer _____.
   (a) compare the price in different shops/sellers
   (b) checks the quality
   (c) both (a) and (b)
10. _____ is data collected by an investigator for a specific purpose.
    (a) Primary data (b) Secondary data (c) Discrete data

II. Fill in the blanks: **10 × 1 = 10**

11. The value of $\sqrt{33+\sqrt{1+\sqrt{64}}}$ _____.
12. x and y are in direct proportion and when x is 12, y is 18. When y is 54, x will be _____.
13. At 60 km/hr, a distance is covered in 4 hours. The same distance is covered in _____ hours at a speed of 40 km/hr.
14. The three altitudes of a triangle intersect at the _____.
15. An altitude of a triangle is a _____ line segment drawn from any vertex to the side opposite to the vertex.
16. _____ is similar to a bar graph.
17. A _____ is an extension of the histogram.
18. A _____ is a circular chart in which the circle is divided into sectors.
19. _____ is the data that is collected, organised and bundled together in categories.
20. A cube number a^3 is numerically equal to the _____ of a cube of side 'a' units.

III. Answer the following questions (any 10): **10 × 3 = 30**

21. Simplify: $39 - [23 - \{29 - (17 - 9 - 3)\}]$

22. Express the following in scientific notation
    (a) 934000000000 (b) 0.02020202 (c) 8291.45

23. Find the value of m for which $13^m \div 12^{-12} = 134^m$.

24. Find the positive square root of the following products and quotients.
    (a) 121×256 (b) 500×20

25. Find the square root of the number by division method 94864.

26. Evaluate: $\sqrt[3]{\frac{3375}{6859}}$

27. A train 250 m long crosses a tunnel 450 m long. If the speed of the train is 72 km/hr, find the time taken to cross the tunnel.

28. Find the mean, median and mode for the following sets of numbers.
    (a) 7, 21, 2, 17, 3, 13, 7, 4, 9, 7, 9
    (b) –3, 4, 0, 4, –2, –5, 1, 7, 10, 5

29. The total mass 6 football players is 360 kg and the mean of another 14 players is 52 kg. Find the mean mass of the 20 players.

30. The mean of 5 numbers is 11. The numbers are in the ratio 1 : 2 : 3 : 4 : 5. Find the smallest number.

31. Which is a better buy in the following choices.
    (a) A pack of 5 notebooks ₹250 or 3 notebooks for ₹165?
    (b) $2\frac{1}{2}$ kg rice for ₹115 or 1500 gm rice for ₹72?
    (c) A dozen pencils for ₹42 or a score pencils for ₹64?

32. The sizes in GB for 8 computer folders are given as 75, 40, 31, 52, 55, 22, 27, 67. These folders have to be saved in 128 GB pen drives.

    (a) Determine the minum number of pen drives required.

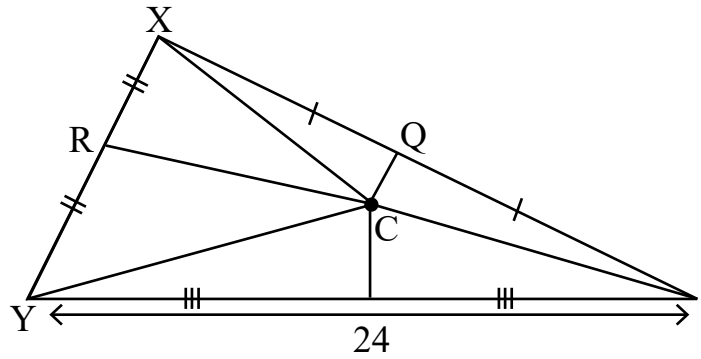
    (b) Use the first - fit method to save the folders in the pen drives.

    (c) Use the first - fit decreasing method to save the folders in the pen drives.

IV. Answer the following questions (any 8): **8 × 5 = 40**

33. Find the square root of 3 3124 by prime factorisation method.
34. Find the square root by suitable grouping of the products.

    (a) $\sqrt{162 \times 70 \times 35}$ (b) $\sqrt{10 \times 160}$
35. Is 74088 a perfect cube? If so, what is its cube root?
36. Find the sum of $1^2 + 2^2 + 3^2 + ... + 50^2$ using the formula.
37. A tile factory makes 600 units in 9 days with the help of 20 machines. How many units can be made in 12 days with the help of 18 machines?
38. C is the circumcenter to the triangle XYZ. Using the diagram. find XC, ZC, PC and find the perimeter of the triangle PCY.



39. The age of 300 workers in factory are collected and tabulated as shown.

Age in years	≤25	≤30	≤35	≤40	≤45	≤450
No. of students	0	45	116	210	25	300

    Construct the histogram.

40. Draw a histogram for the following data

Class interval	0–10	10–20	20–30	30–40	40–50	50–60
No. of students	5	15	23	20	10	7

41. Write the reciprocals of the following:

    (a) 24^2 (b) $\left(\frac{3}{5}\right)^{-30}$
42. Express – 5000 as product of prime numbers in exponential form.

V. Practical geometry: **2 × 5 = 10**

43. Construct a rhombus whose diagonals are 7cm and 6cm and find its area.
44. Construct a square whose diagonal is 7.6cm and find its area.