20.09.19 EVERWIN MATRIC.HR. SEC. SCHOOL Time: 2.30 Hrs.
Std: IX SUMMATIVE ASSESSMENT -1 Marks: 100
MATHEMATICS

I. Choose the correct answer: 16x1=16

1. If B-A is B, then A∩B is _____.
   a) A b) B c) ∪ d) ∅
2. $(A \cup B)' \cup (A' \cap B)$ = _____.
   a) B' b) ∪ c) ∅ d) A'
3. An irrational number between 2 and 2.5 is _____.
   a) $\sqrt{11}$ b) $\sqrt{5}$ c) $\sqrt{2.5}$ d) $\sqrt{8}$
4. If $\sqrt{80} = K\sqrt{5}$, then K = _____.
   a) 2 b) 4 c) 8 d) 16
5. The root of the polynomial equation $2x + 3 = 0$ is _____.
   a) $\frac{1}{3}$ b) $\frac{-1}{3}$ c) $\frac{-3}{2}$ d) $\frac{-2}{3}$
6. Degree of the polynomial $(y^3 - 2)\ (y^3 + 1)$ is _____.
   a) 9 b) 2 c) 3 d) 6
7. The centroid divides each median in the ratio _____ from the vertex.
   a) 1:2 b) 2:1 c) 1:3 d) 3:1
8. The algebraic sum of the deviations of set of n values from their mean is _____.
   a) 0 b) n-1 c) n d) n+1
9. The mean of a set of numbers is $\bar{X}$. If each number is multiplied by z, then mean is _____.
   a) $\bar{X}$ + Z b) $\bar{X}$ - Z c) Z $\bar{X}$ d) $\bar{X}$
10. A number between 0 and 1 that is used to measure uncertainty is called _____.
    a) Random Variable b) Trial c) Simple event d) Probability
11. Which of the following cannot be taken as probability of an event?
    a) 0 b) 0.5 c) 1 d) -1
12. Two events E and E' are said to be complementary events if P(E) + P (E') = _____.
    a) 0 b) 1 c) -1 d) ∞
13. A distribution having more than three modes is called _____.
    a) Bimodal b) Trimodal c) multimodal d) unimodal
14. $4\sqrt{7} \times 2\sqrt{3}$ = _____.
    a) $6\sqrt{10}$ b) $8\sqrt{21}$ c) $8\sqrt{10}$ d) $6\sqrt{21}$
15. The mean of the square of first 11 natural numbers is _____.
    a) 26 b) 46 c) 48 d) 52
16. Which of the following is correct?
    a) {7} ∈ {1,2,3,4,5,6,7,8,9,10} b) 7∈{1,2,3,4,5,6,7,8,9,10}
    c) 7 ∉ {1,2,3,4,5,6,7,8,9,10} d) {7} {1,2,3,4,5,6,7,8,9,10}

II. Answer any twelve questions from the following:
(Q.No.33 is compulsory): 12x2=24

17. If a probability of a player winning a particular tennis match is 0.72. What is the probability of the player loosing the match?
18. Find the mode for the set of values 17,18,20,20,21,21,22,22.
19. When a dice is rolled, find the probability to get the number which is greater than 4?
20. The probability that it will rain tomorrow is $\frac{91}{100}$. What is the probability that it will not rain tomorrow?
21. The mean of five positive integers is 6. If four of the integers are 3,4,6,9 then find the fifth integer.
22. The arithmetic mean of 6 values is 45 and if each value is increased by 4, then find the arithmetic mean of new set of values.
23. Factorise: $x^2 + 9x + 18$
24. Find the root of the polynomial equation $9x - 4 = 0$.
25. Without actual division, find whether it is terminating or non terminating decimal expansion $\frac{7}{128}$
26. Find the fifth root of 32.
27. Expand: $(3a-4b)^2$.
28. If n(A)=4, then find n(P(A))
29. If n(A)=4, n(B)=5, n(A∪B)=7, then find n(A∩B)?
30. Draw Venn diagram for $(A \cup B)'$.
31. Simplify: $\sqrt{35} \div \sqrt{7}$
32. Write the coefficient of x^2 and constant term from the expression $\pi x^2 - x + 2$.
33. a) A set of numbers consists of five 4's, four 5's, nine 6's, and six 9's. What is the mode?
    (or)
    b) Expand $(3x-1)(3x+2)(3x-4)$

III. Answer any ten of the following: (Q.No.49 is compulsory either a (or) b): 10x5=50

34. Factorise: $5x^2 - 29xy - 42y^2$

35. Draw Venn diagram and shade the region representing the following sets:
    1) A∪B ii) A∩B
36. Check if $(x + 2)$ and $(x - 4)$ are the sides of a rectangle whose area is x^2-2x-8 by using factor theorem.
37. Evaluate the following by using identities:
    1001^3
38. Factorise: i) P^2-6P-16 ii) $8x^3+125y^3$
39. Arrange surds in descending order: $\sqrt[3]{5}$, $\sqrt[9]{4}$, $\sqrt[6]{3}$
40. Calculate the mean of the following distribution:

Class Interval	0-10	10-20	20-30	30-40	40-50
Frequency	5	7	15	28	8

41. Find the mode of the following data:

Marks	0-10	10-20	20-30	30-40	40-50
No. of Students	22	38	46	34	20

42. There are 24 balls in a pot. If 3 of them are red, 5 of them are Blue and the remaining are Green then, what is the probability of picking out.
    a) a blue ball ii) a red ball and iii) a green ball?
43. In a survey of 400 youngsters aged 16-20 years, it was found that 191 have their voter ID card. If a youngster is selected at random, find the probability that the youngster does not have their voter ID card.
44. If $x = \sqrt{5} + 2$, then find the value of $x^2+\frac{1}{x^2}$
45. Express in scientific notation:
    i) 2000.57 ii) 0.0009000002
46. Represent 5.348 on the number line.
47. Express $\frac{1}{13}$ in decimal form. Find the length of the period of decimals.
48. Verify A-(B∩C)=(A-B)∪ (A-C) using Venn diagrams.
49. a) Represent $\sqrt{9.3}$ on a number line.
    (or)
    b) Verify $(A \cup B)' = A' \cap B'$ using Venn diagrams.

IV. Answer the following: 1x10=10

50. a) Construct the ΔLMN such that LM=7.5cm, MN=5cm and LN=8cm. Locate its centroid.
    (or)
    b) Draw the ΔABC where AB=6cm, ∠B=110° and AC=9cm. Locate its centroid.