SUMMATIVE ASSISEMENT – 1, JANUARY - 2022

MATHEMATICS PAPER – 2

(Modal Paper – 5)

Class: 9ᵗʰ   Max. Marks: 40   Time: 2hr 45 min

Instructions to students:

1. **There are four sections and 33 questions in this paper.**
2. **Answers should be written in answer sheets.**
3. **There is an internal choice in Section – III**
4. **Write all questions visible and legibly.**
5. **15 Minutes are given for reading the question paper and 2hr 30 min given for writing answers.**
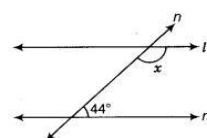
Section – 1

Note: 1. Answer all the questions

    2. Each question carries 1 mark.   4 × 1 = 4 M

1. "Things which are equal to same thing are equal to one another". Explain this axiom with an example?

2. Find 'x' in the adjacent figure?

3. What is the sum of exterior angles of a triangle?

4. Find median of 0.4, 3.04, 1.7, 3.006, 2.3, 1.19, 3.3?

Section – II

Note: 1. Answer all the questions.

    2. Each question carries 2 marks.   5 × 2 = 10 M

5. If the ratio of two supplementary angles is 4 : 5, then find the angles?

6. Write the formula to find mean in deviation method, and explain the term involved in it?

7. The angles of a triangle are $(2x)^0$, $(3x + 5)^0$ and $(4x – 14)^0$. Find the value of 'x' and the measure of angles?

8. In the following figure, we have AC = XD. C and D are mid points of AB and XY respectively. Show that AB = XY.
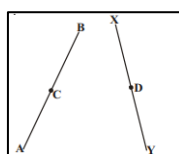
9. Write any four axioms from your daily life?
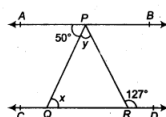
Section – III

Note: 1. Answer all the questions.

    2. Each questions carries 4 marks.

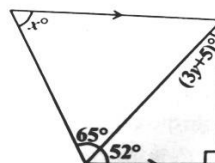   **3. There is internal choice for each question.**   **4 × 4 = 16 M**

10. Find the values of x and y in the figure?

OR

Find 'x' and 'y' in the adjacent figure.

11. Find the value of 'K' if the mean of the following data is 7.2

x	2	4	6	8	10	12
f	4	7	10	6	K	3

OR

Find mean of the following data in direct method?

x	5	6	7	8	9	10
f	3	10	17	18	8	4

12. Prepare a grouped frequency distribution to the following data having class interval 0 - 10 and find its less than cumulative frequency?

42, 21, 50, 37, 42, 37, 38, 43, 49, 52, 38, 53, 57, 47, 29

59, 61, 33, 17, 17, 39, 44, 42, 39, 14, 07, 27, 19, 54, 51

OR

The relative humidity (in %) of a certain city for a September month was as follows:

98.1, 98.6, 99.2, 90.3, 86.5, 95.3, 92.9, 96.3, 94.2, 95.1, 89.2, 92.3, 97.1, 93.5, 92.7,

95.1, 97.2, 93.3, 95.2, 97.3, 96.0, 92.1, 84.9, 90.0, 95.7, 98.3, 97.3, 96.1, 92.1, 89.0

A) Construct a grouped frequency distribution table with the classes 84 – 86, 86 – 88 etc.

B) what is the range of the data?

13. Prove "Exterior angle of a triangle is equal to sum of interior opposite angels"?

OR

Prove "The angle between the bisector of linear pair angles is right angle"?

Time: 30 Mins.	PART – B	Marks:10

Instructions:

1. Answer All the questions. 20 × ½ = 10 M

2. Each question has 4 options.

3. Marks are not awarded for over writing answers.

4. Each question carries ½ mark.

Section – IV

Note: 1. Answer all questions

    2. Each question carries ½ mark. 20 × ½ = 10 M

14. Deductive proof was introduced by _____

  A) Euclid   B) Thales   C) Boudhayana   D) None of these

15. The word 'Geometry' is derived from _____

  A) Greek   B) Latin   C) English   D) Sanskrit

16. The central tendency which used in business is _____

  A) Mean   B) Median   C) Mode   D) Range

17. Choose the correct answer following.

  Statement P: Two distinct lines can't have more than one point in common.

  Statement Q: If 3 or more lines have a common point, they are called current lines.

  A) P true, Q false   B) P false, Q true   C) Both P, Q are true   D) Both P, Q are false

18. The difference between lower limits of two consecutive classes is called _____

  A) class mark   B) class size   C) frequency   D) class limits

19. "Every even number greater than 4 can be written as sum of two primes" is

  A) Axiom   B) Postulate   C) Conjecture   D) Theorem

20. The median of the following data is _____

x	10	12	14	16
f	4	7	5	3

  A) 10   B) 12   C) 13   D) 7

21. The mean of first 'n' natural numbers is _____

  A) $\frac{n}{2}$ B) $\frac{n+1}{2}$ C) n - 1   D) $\frac{n(n+1)}{2}$

22. The supplementary angle of x^0 is _____

  A) $(90 - x)^0$ B) $(180 - x)^0$ C) $(360 - x)^0$ D) x^0

23. Match the following.

   A. Class size   (   )   i) number of observations

   B. Class mark   (   )   ii) difference of boundaries

   C. Frequency   (   )   iii) average of boundaries

   A) A – i, B – ii, C – iii   B) A – ii, B – iii, C – i   C) A – ii, B – i, C – iii   D) A – iii, B – ii, C – i

24. The complementary angle of an angle is twice the angle, then the angle is _____

   A) 45^0 B) 30^0 C) 60^0 D) 90^0

25. Statements which have self-evident are called _____

   A) Theorems   B) Axioms   C) Conjectures   D) Surds

26. Which of the following is undefined term?

   A) Angle   B) plane   C) point   D) Both B & C

27. In ΔABC, AB = AC and an exterior angle $\angle ACD = 105^0$, then $\angle BAC$ = _____

   A) 105^0 B) 60^0 C) 30^0 D) 75^0

28. The sum of 15 observations is 120. Mean of the observations is _____

   A) 8   B) 10   C) 135   D) 67.5

29. Assertion: Mode of first 8 prime numbers is 7.

   Reason: The observation which occur most frequently is called mode.

   A) Assertion and reason are true and reason is the correct explanation of assertion.

   B) Assertion and reason are true but reason is not the correct explanation of assertion.

   C) Assertion is true but reason is false.

   D) Assertion is false but reason is true.

30. Class mark of a class is denoted by _____

   A) h   B) f   C) x   D) d

31. In a triangle ABC, $\angle A + \angle B = 65^0$ and $\angle B + \angle C = 140^0$, then $\angle B$ = _____

   A) 40^0 B) 25^0 C) 115^0 D) 60^0

32. The supplementary angle of an obtuse angle is _____

   A) Acute   B) Right   C) Obtuse   D) Straight

33. If the mean of a – 2, a, a + 5 is 7, then 'a' = _____

   A) 6   B) 7   C) 8   D) 3