BK BIRLA CENTRE FOR DUCATION

SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARYCO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL
POST MID TERM EXAMINATION, (2025)
**MATHEMATICS**

INDIAN PUBLIC SCHOOLS' CONFERENCE

Class : IX   Duration: 1 Hr
Date   : 07 -01-2025   Max. Marks: **25**
Admission No.:   Roll No.:

General Instructions:

1. All Questions are compulsory.
2. There are 13 questions.

I.   **CHOOSE THE CORRECT ALTERNATIVE IN THE FOLLOWING.**   **5**

1. The class mark of the class 90-130 is:
    a) 90   b) 105   c) 115   d) 110

2. The range of the data:
    25, 81, 20, 22, 16, 6, 17,15,12, 30, 32, 10, 91, 8, 11, 20 is
    a) 10   b) 75   c) 85   d) 26

3. The mean of the data: 4, 10, 5, 9, 12 is;
    a) 8   b)10   c) 9   d) 15

4. ABCD is a rhombus such that $\angle ACB = 40^0$ then $\angle ADB$ is
    a) 40^0 b) 45^0 c) 50^0 d) 60^0

5. A diagonal of a parallelogram divides it into two congruent:

    a) Square   b) Parallelogram   c) Triangles   d) Rectangle

II.   **SOLVE THE FOLLOWING**

6. Find the mean of the first eight even natural numbers.   **2**
7. If the diagonals of a parallelogram are equal , then show that it is rectangle.   **2**
8. Prove that the diagonal of a parallelogram divides it into two congruent triangles. **2**
9. ABCD is a parallelogram and AP and CQ are perpendiculars from vertices A and C on diagonal BD. Show that   **2**
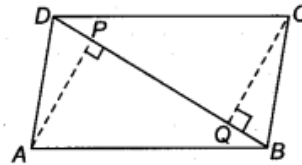
(i) $\triangle APB \cong \triangle CQD$ (ii) $AP = CQ.$

10. Represent the following data in the form of Histogram.   **3**

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	1	4	6	10	14	30	17	10	6	2

11. For the following data , draw frequency polygon. **3.**

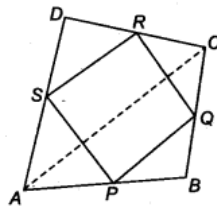| Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No of students	6	14	18	20	32	16	10	5

12. ABC is a triangle right angled at C. A line through the mid-point M of hypotenuse AB and parallel to BC intersects AC at D (Refer figure). Show that

i) D is the mid-point of AC   ii) MD ⊥ AC   iii) CM = $\frac{1}{2}$ AB   **3**
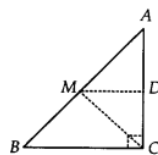
13. ABCD is a quadrilateral in which P, Q, R and S are mid-points of the sides AB, BC, CD and DA (see figure). AC is a diagonal. Show that

i) SR || AC and SR = $\frac{1}{2}$ AC   ii) PQ = SR   iii) PQRS is a parallelogram.   **3**

****