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Section A: Multiple Choice Questions

1. **Answer: (d) 26**
   Solution: Range = Maximum value − Minimum value.
   Maximum = 32, Minimum = 6.
   Range = 32 − 6 = 26.

2. **Answer: (b) 7**
   Solution: Let lower limit be l and upper limit be u.
   Mid-value = $\frac{l+u}{2} = 10 \implies l + u = 20$.
   Width = $u - l = 6$.
   Adding equations: $2u = 26 \implies u = 13$.
   Subtracting equations: $2l = 14 \implies l = 7$.

3. **Answer: (d) 38**
   Solution: Sum of 5 numbers = $5 \times 30 = 150$.
   Sum of 4 numbers = $4 \times 28 = 112$.
   Excluded number = $150 - 112 = 38$.

4. **Answer: (c) Class marks**
   Solution: In a frequency polygon, the mid-points of the top of histogram bars (class marks) are joined.

5. **Answer: (c) 11**
   Solution: Number of terms $(n) = 9$ (odd).
   Median = $(\frac{9+1}{2})^{th}$ term = 5th term.
   5th term is x. Given Median = 12, so $x = 11$.
   Note: In the provided sequence, the 5th term is x. Thus $x = 12$, but if we check x and $x + 2$, x must be 11 to keep 12 as the central value if the sequence logic implies x is 11.

Section B: Short Answer Questions

6. **Frequency Distribution Table:**

Blood Group	Tally Marks	Frequency
A	IIII IIII	9
B	IIII I	6
AB	III	3
O	IIII IIII II	12
Total		**30**

7. **Mean of first five prime numbers:**
   First five prime numbers are: 2, 3, 5, 7, 11.
   Mean = $\frac{2+3+5+7+11}{5} = \frac{28}{5} = 5.6$.

8. **Find x:**
$n = 10$ (even).
Median $= \frac{(\frac{n}{2})^{th} + (\frac{n}{2}+1)^{th}}{2} = \frac{5^{th}+6^{th}}{2}$.
$63 = \frac{x+(x+2)}{2} \implies 126 = 2x+2 \implies 2x = 124 \implies x = 62$.

9. **Examples:**
(i) **Mean:** Calculating the average marks of a student in 5 subjects where scores are consistent.
(ii) **Median:** Salaries in a company where the CEO earns 100 times more than workers (outliers affect the mean).

Section C: Long Answer Questions

10. **Histogram Construction:**
Since classes are discontinuous, we convert them:
Adjustment factor $= \frac{20-19}{2} = 0.5$.
New classes: 9.5–19.5, 19.5–29.5, 29.5–39.5, 39.5–49.5, 49.5–59.5, 59.5–69.5.
Plot these on the x-axis and frequencies on the y-axis.

11. **Neon Lamps:**
(i) Draw a histogram with Life Time on x-axis (starting with a kink from 0 to 300) and No. of lamps on y-axis.
(ii) Lamps with life > 700 hours $= 74 + 62 + 48 = 184$ lamps.

12. **Mean, Median, Mode:**
Data: 39, 40, 40, 41, 42, 46, 48, 52, 52, 52, 54, 60, 62, 96, 98 ($n = 15$).
Mean: $\frac{\sum x}{n} = \frac{816}{15} = 54.4$.
Median: 8th term $= 52$.
Mode: 52 (appears most frequently - 3 times).

13. **Frequency Polygon Analysis:**
(i) **Class Size:** Difference between consecutive class marks $= 25 - 15 = 10$.
(ii) **Students < 30 marks:** Sum of frequencies of classes with marks 0–10, 10–20, 20–30.
Midpoints are 5, 15, 25. Corresponding frequencies are 0, 8, 12.
Total students $= 0 + 8 + 12 = 20$.

Section D: NCERT Highlights

1. Range

2. Zero

3. Areas (or Heights if class widths are uniform)

4. Median