QUICK DRILL · CBSE CLASS 11

Measures of Central Tendency

Statistics for Economics, CI-11 · Chapter 5 · 15 MCQs · 20 minutes · PYQ-tagged with time budgets

DATE	TOTAL MARKS	DURATION	MARKING	TARGET
_____	15	20 min	+1 / 0	⩾ 12/15

OBJECTIVES

Reinforce the four core topics of Measures of Central Tendency via 15 PYQ-derived MCQs. Identify weak sub-topics via concept-node IDs (see answer key). Build per-question time budget habit.

INSTRUCTIONS

Attempt all 15. Time budget shown per Q (use it as pacing guide). Mark answers (A/B/C/D) in the margin. Answer key + explanations on the last page. **Don't peek — score yourself honestly.**

SECTION · QUICK DRILL

Q 1–15 · 20 MIN

Q1. Which of the following is NOT a measure of central tendency?

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

PYQ 2024 · Delhi · 1m · ? 30s

Q2. The arithmetic mean of 5, 10, 15, 20, 25 is:

(A) 10 **(B)** 12
(C) 15 **(D)** 20

PYQ 2023 · Delhi · 1m · ? 30s

Q3. If $\Sigma(x - \bar{x}) = 0$ for a data set, this property holds for:

(A) Mean only **(B)** Median only
(C) Mode only **(D)** All three

PYQ 2023 · OD · 1m · ? 30s

Q4. For the data 2, 4, 4, 6, 8, 10, the median is:

(A) 4 **(B)** 5
(C) 6 **(D)** 7

PYQ 2023 · Delhi · 1m · ? 30s

Q5. The mode of the data 3, 5, 7, 5, 9, 5, 11 is:

(A) 3 **(B)** 5
(C) 7 **(D)** 11

PYQ 2022 · OD · 1m · ? 30s

Q6. If Mean = 30 and Median = 28, then Mode (by empirical relation) is:

(A) 20 **(B)** 24
(C) 26 **(D)** 32

PYQ 2022 · Delhi · 1m · ? 45s

Q7. Which measure of central tendency is MOST affected by extreme values?

(A) Mean **(B)** Median
(C) Mode **(D)** Quartile

PYQ 2021 · Delhi · 1m · ? 30s

Q8. For qualitative data such as 'favourite colour', the most appropriate average is:

(A) Mean **(B)** Median
(C) Mode **(D)** Geometric mean

PYQ 2021 · OD · 1m · ? 30s

Q9. In the formula for AM by step-deviation, d' equals:

(A) (x – A) **(B)** (x – A) × h
(C) (x – A) / h **(D)** A – x

PYQ 2020 · Delhi · 1m · ? 30s

Q10. Median is best located graphically using:

(A) Histogram **(B)** Frequency polygon
(C) Ogive (cumulative frequency curve) **(D)** Bar diagram

PYQ 2020 · OD · 1m · ? 30s

Q11. Marks of 4 students: 60, 70, 80, 90 with weights 1, 2, 3, 4 respectively. Weighted mean is:

(A) 75 **(B)** 78
(C) 80 **(D)** 82

PYQ 2022 · OD · 3m · ? 60s

Q12. Two groups have means 20 (n=10) and 30 (n=20). Combined mean is:

(A) 25 **(B)** 26.67
(C) 27.5 **(D)** 28

PYQ 2021 · Delhi · 3m · ? 60s

Q13. For an open-end class distribution (e.g., 'above ₹1,00,000'), the BEST measure of central tendency is:

(A) Mean **(B)** Median
(C) Mode **(D)** Geometric mean

PYQ 2020 · Delhi · 1m · ? 30s

Q14. In a perfectly symmetric distribution, the relation between Mean, Median, Mode is:

(A) Mean > Median > Mode **(B)** Mean < Median < Mode
(C) Mean = Median = Mode **(D)** Mode = 2·Median − Mean

PYQ 2019 · Delhi · 1m · ? 30s

Q15. Mode is graphically determined using:

(A) Ogive **(B)** Histogram
(C) Pie chart **(D)** Scatter plot

PYQ 2019 · OD · 1m · ? 30s

ANSWER KEY & EXPLANATIONS

Q 1–15 · MARK YOUR SCORE

Q1. Answer: D

Range is a measure of dispersion, not central tendency.

Q2. Answer: C

$\Sigma x = 75$, $n = 5$, $\bar{x} = 75/5 = 15$.

Q3. Answer: A

The sum of deviations from the arithmetic mean is always zero — this is the defining self-balancing property of the AM.

Q4. Answer: B

Data is already arranged. n = 6 (even), so median = mean of 3rd and 4th terms = (4+6)/2 = 5.

Q5. Answer: B

The value 5 appears thrice — the highest frequency. Mode = 5.

Q6. Answer: B

Mode = 3·Median − 2·Mean = 3·28 − 2·30 = 84 − 60 = 24.

Q7. Answer: A

Mean uses every observation, so one outlier shifts it noticeably. Median and mode are positional/frequency-based and resist outliers.

Q8. Answer: C

You cannot 'average' colours arithmetically. The most frequent category (mode) is the only meaningful measure.

Q9. Answer: C

Step-deviation: d' = (x − A) / h. Division by h shrinks deviations to small integers.

Q10. Answer: C

Ogive plots cumulative frequency; drawing a horizontal at N/2 and dropping a perpendicular locates median.

Q11. Answer: C

$\Sigma WX = 1{\cdot}60 + 2{\cdot}70 + 3{\cdot}80 + 4{\cdot}90 = 60+140+240+360 = 800$. $\Sigma W = 1+2+3+4 = 10$. Weighted mean = 800/10 = 80.

Q12. Answer: B

Combined mean = (10·20 + 20·30) / (10+20) = (200 + 600) / 30 = 800/30 = 26.67.

Q13. Answer: B

Mean cannot be computed (no class-mark for open-end). Median uses only N/2 and the median class — works perfectly.

Q14. Answer: C

In symmetric data, all three coincide. The empirical relation reduces to 0 = 0.

Q15. Answer: B

From the top corners of the modal bar in a histogram, draw lines to adjacent bar tops; the intersection's perpendicular foot gives mode.