# Presentation of Data

Standard difficulty · 20 questions · 40 marks · Time: 37 minutes

Name: _____ Date: _____ Score: ____ / 40

Write full answers in Sections B and C. Answers are on the last page — try every question first!

## Section A — Choose the correct answer — 8 × 1 = 8 marks

1. The three ways of presenting data are textual, tabular and:
   **(a)** random **(b)** sampled **(c)** oral **(d)** diagrammatic

2. Which diagram best shows literacy rates of five states in one year?
   **(a)** a simple bar diagram **(b)** an arithmetic line graph
   **(c)** an ogive **(d)** a histogram

3. In a table, the stubs is:
   **(a)** the unit in which the figures are given
   **(b)** extra information about the table, at the bottom
   **(c)** what the table is about, placed at the top
   **(d)** the row headings

4. A family spends ₹21,000 a month: food ₹7,350, transport ₹4,200, savings ₹2,100, clothing ₹7,350. In a pie diagram, what angle is the sector for savings?
   **(a)** 54 degrees **(b)** 36 degrees **(c)** 10 degrees **(d)** 324 degrees

5. In a pie diagram, the sector for one item has an angle of 198°. What percentage of the total does it stand for?
   **(a)** 60 % **(b)** 198 % **(c)** 45 % **(d)** 55 %

6. For the data below, what is the point on the less than ogive at the upper limit 70?
   Class: 30–40, 40–50, 50–60, 60–70, 70–80
   Frequency: 6, 30, 22, 24, 24
   **(a)** 83 **(b)** 24 **(c)** 82 **(d)** 106

7. In a histogram with a standard class width of 10, a class of width 30 has a frequency of 51. What should the height of its rectangle be, so that area matches frequency?
   **(a)** 1,530 **(b)** 51 **(c)** 17 **(d)** 18

8. An arithmetic line graph shows exports rising from ₹840 crore to ₹1,218 crore over a decade. By what percentage did they rise?
   **(a)** 50 % **(b)** 378 % **(c)** 45 % **(d)** 145 %

## Section B — Short answer — 8 × 2 = 16 marks

9. What is the difference between a bar diagram and a histogram?

**10.** A family spends ₹41,000 a month: health ₹2,050, clothing ₹30,750, education ₹2,050, fuel ₹4,100, transport ₹2,050. Find the pie-diagram angles for clothing and transport.

**11.** Which diagram would you use for each? (a) how many workers earn less than each wage level (b) the shares of a family's spending on food, rent and fuel

**12.** What does each part of a table hold: (a) the table number (b) the unit of measurement

**13.** Write the points of the more than ogive (lower limit, cumulative frequency) for:
Class: 60–80, 80–100, 100–120, 120–140
Frequency: 17, 6, 17, 30

**14.** Write the points (class mark, frequency) to plot a frequency polygon for:
Class: 60–70, 70–80, 80–90, 90–100
Frequency: 30, 5, 22, 24

**15.** A component bar of total height ₹40,000 is split into health ₹18,000, savings ₹18,000, clothing ₹4,000. What percentage of the bar is each part?

**16.** A histogram has a standard class width of 10. Find the adjusted heights for (a) a class of width 50 with frequency 75 (b) a class of width 30 with frequency 36.

## Section C — Longer answers — 4 × 4 = 16 marks

**17.** Explain the three kinds of bar diagrams with examples.

**18.** A household spends ₹28,000 a month: clothing ₹7,000, fuel ₹14,000, transport ₹1,400, food ₹1,400, education ₹4,200. (a) Find the angle of each sector of a pie diagram. (b) Check that the angles add to 360°. (c) Which item takes the largest sector?

**19.** For the wage data below: (a) write the less than cumulative frequencies against the upper limits (b) write the more than cumulative frequencies against the lower limits (c) what does the point where the two ogives cross show?
Daily wage (₹): 10–15, 15–20, 20–25, 25–30, 30–35
Workers: 24, 17, 16, 18, 26

**20.** Match each with its best diagram: (a) how many workers earn less than each wage level (b) a state's output split into farm, industry and services for three years (c) foodgrain output of India over twenty years. Choose from: an arithmetic line graph; a component bar diagram; an ogive.

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# Answer key

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| Q | Answer | Working |
|---|---|---|
| 1 | **(d) diagrammatic** | — |
| 2 | **(a) a simple bar diagram** | — |
| 3 | **(d) the row headings** | — |
| 4 | **(b) 36 degrees** | 2,100 ÷ 21,000 × 360° |
| 5 | **(d) 55 %** | 198 ÷ 360 × 100 |
| 6 | **(c) 82** | 6 + 30 + 22 + 24 = 82 |
| 7 | **(c) 17** | 51 × 10 ÷ 30 = 17 |
| 8 | **(c) 45 %** | (1,218 − 840) ÷ 840 × 100 |
| 9 | **Bars have equal gaps and only height matters; histogram rectangles touch, and their area (width and height) matters.** | — |
| 10 | **clothing 270°, transport 18°** | share × 360°: 75% and 5% |
| 11 | **(a) an ogive (b) a pie diagram** | — |
| 12 | **(a) a number to identify the table (b) the unit in which the figures are given** | — |
| 13 | **(60, 70), (80, 53), (100, 47), (120, 30)** | add the frequencies from the bottom class upwards |
| 14 | **(65, 30), (75, 5), (85, 22), (95, 24)** | class mark = (lower + upper) ÷ 2 |
| 15 | **health 45%, savings 45%, clothing 10%** | part ÷ total × 100 |
| 16 | **(a) 15 (b) 12** | frequency × 10 ÷ width |
| 17 | **Simple bar (literacy rate of states), multiple bar (male and female literacy side by side), component bar (a total split into parts, like workers by sector).** | — |
| 18 | **(a) clothing 90°, fuel 180°, transport 18°, food 18°, education 54° (b) 90 + 180 + 18 + 18 + 54 = 360° (c) fuel** | angle = amount ÷ total × 360° |
| 19 | **(a) less than 15: 24; less than 20: 41; less than 25: 57; less than 30: 75; less than 35: 101 (b) 10 and more: 101; 15 and more: 77; 20 and more: 60; 25 and more: 44; 30 and more: 26 (c) the median** | — |
| 20 | **(a) an ogive (b) a component bar diagram (c) an arithmetic line graph** | — |



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