Data Handling & Graphs

QUESTIONS

1. The mean of 10 observations is 5.5. When one new observation is included in the data set, the mean of the observations becomes 6.0.

   What is the value of new observation that was added to the data set?

   (a) 11   (b) 10   (c) 12   (d) 13

2. Yoga classes were held for following duration in a particular week.

Day	Duration of exercise (min)
Sunday	40
Monday	50
Tuesday	60
Wednesday	X
Thursday	30
Friday	90
Saturday	90

   If the average duration of yoga class in the week is 60 minutes, what was the duration of yoga class on Wednesday?

   (a) $60 \, min$ (b) $30 \, min$ (c) $55 \, min$ (d) $65 \, min$

3. What is the arithmetic mean of 2, ...9, 10 and 11?

   (a) 6.5   (b) 7   (c) 7.5   (d) 8

4. The runs scored by India team in recently held five matches ODI series, are 310, 306, 288,222,374.

   What is the average score of India in the series?

   (a) 294   (b) 300   (c) 288   (d) 310

5. In a data, 11 numbers are arranged in increasing order. If the 9th number is increased by 1; the median increases by

   (a) Zero   (b) 1   (c) 1.5   (d) 2

6. What is the mean of the first seven prime numbers?

   (a) $9\dfrac{5}{7}$ (b) $9\dfrac{5}{8}$ (c) 7 (d) $8\dfrac{2}{7}$

7. The number of candidates who appeared for a certain competitive exam in consecutive six years is 1 lakh, 1.50 lakh, 2 lakh, 1.5 lakh, 0.9 lakh, 2.7 lakh.

   What is the average of the number of candidates who appeared?

   (a) $1 \, lakh$ (b) $1.6 \, lakh$ (c) $1.55 \, lakh$ (d) $2.6 \, lakh$

8. The mean of 5 observations is 7. If mean of the first three observations is 5 and that of the last three is 9, then the third observation is.

   (a) 5   (b) 10   (c) 7   (d) 9

9. The mean of 8 numbers is 10. If one number is excluded, mean of the remaining numbers becomes 9, then the excluded number is

   (a) 16   (b) 9   (c) 8   (d) 17

10. The median value of the given data is 98,75,90,181,171,101,94,100, 710, 500, 7,16

(a) 97   (b) 98   (c) 93   (d) 99

11. When a coin is tossed at random, then the probability of getting a tail is:

(a) $\dfrac{1}{3}$ (b) $\dfrac{1}{2}$ (c) $\dfrac{3}{4}$ (d) $\dfrac{1}{4}$

12. A coin is tossed 500 times and head is obtained 280 times. On tossing a coin at random, the probability of getting a tail is

(a) $\dfrac{1}{99}$ (b) $\dfrac{1}{2}$ (c) $\dfrac{3}{50}$ (d) $\dfrac{11}{25}$

13. What is the mode of the data 46, 64, 87,41, 64, 77, 78, 46, 36, 64, 66.

(a) 46   (b) 77   (c) 64   (d) 65

14. Which of the following is true about mean?

(a) It occurs most frequently

(b) It divides observations into two equal parts.

(c) It is representative of the whole group.

(d) It is the sum of observations.

15. If each entry of a data is increased by 2, how does the mean change?

(a) Remains the same.   (b) Increases by 2

(c) Decreases by 5   (d) Becomes half.

16. The average weight of a sample of 10 fruits is 60 g. Later, it was found that the weighing machine had shown the weight of each fruit 5 g less. What is the correct average weight of a fruit?

(a) $65\,g$ (b) $55\,g$ (c) $50\,g$ (d) $60\,g$

17. The mean of 6, y, 4, x and 11 is 7. Which of the following is true?

(a) $x+y=14$ (b) $x-y=14$ (c) $3x+4y=63$ (d) $x^2-y^2=21$

18. Which of the following is incorrect about mode?

(a) It is a central tendency

(b) It occurs most frequently

(c) It may between the maximum and minimum observations

(d) It is the average of the two middle terms.

19. Rajani has a box with 16 marbles numbered from 1 to 16 on each of them. She picks a marble from it without seeing. What is the probability that the marble picked has the number 6 on it?

(a) $\dfrac{1}{16}$ (b) $\dfrac{1}{8}$ (c) $\dfrac{3}{8}$ (d) $\dfrac{1}{2}$

20. Which of the following statements is correct?

(a) The mean, median, and mode of a data set are always equal

(b) A data set can have more than one mode

(c) A data set can have more than one median

(d) A data set can have more than one mean

21. Faces of a cubical block is painted in violet, pink, blue, green, yellow & orange colour. The block is rolled. What is the probability of getting orange colour?

(a) $\dfrac{2}{3}$ (b) $\dfrac{1}{2}$ (c) $\dfrac{1}{3}$ (d) $\dfrac{1}{6}$

22. The given table shows the number of students in various classes of a certain school for the academic session 2016-17.

Class	I	II	III	IV	V
Number of students	90	100	70	80	90

Which bar graph correctly represents the given information?

(a)

(b)

(c)

(d)
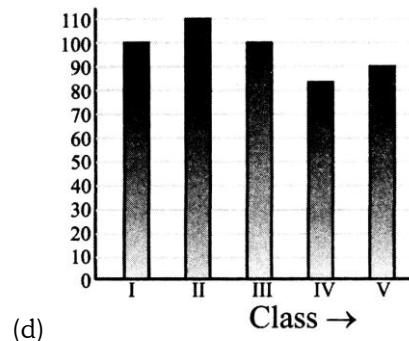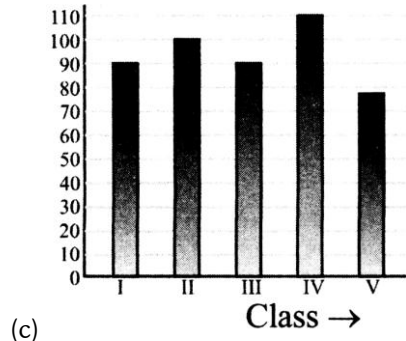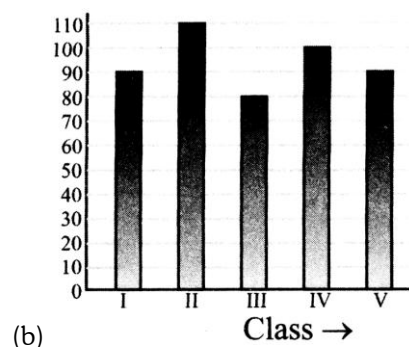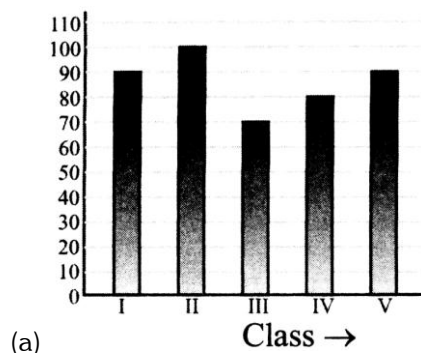
23. The given double bar graph shows the literate population of five cities I, II, III, IV, V along with the population of literate females.

Scale : 1 unit = 5 lakh
☐ Literate females
■ Literate population
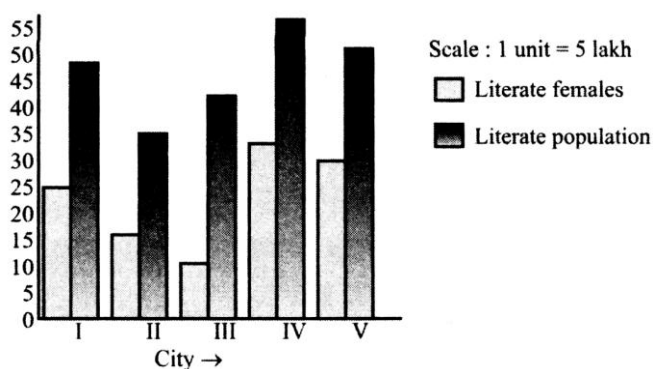
Which city has the largest literate male population?

(a) II   (b) IV   (c) III   (d) I

24. Which of the following is true?

(a) The mean of the first 7 natural numbers is the same as their median.

(b) The mean of the first 7 natural numbers is the same as the mean of the first 7 whole numbers.

(c) The median of the first 7 whole number is the same as the mean of the first 7 natural numbers.

(d) The mode of first 7 whole numbers is 7.

25. The pie - chart depicts the results of a survey conducted to identify the favorite game of some students.
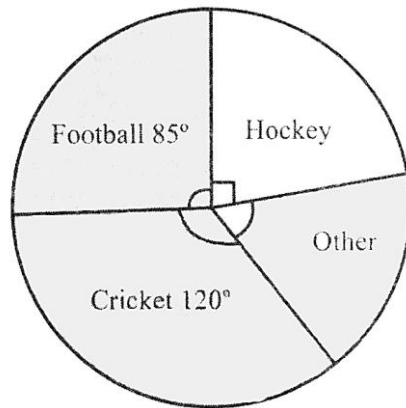

Home many students like other games if the total number of students is 360?

(a) 100 (b) 90 (c) 55 (d) 65

26. In which of these situations is a double bar graph useful?

(i) Enrolment of students in class VII in 2009 and 2010.

(ii) Marks obtained in Term I and Term II examinations.

(iii) Marks obtained in all subjects of a term examination.

(a) (i) and (ii) (b) (ii) and (iii) (c) (iii) and (i) (d) (i) only

27. The median of first seven consecutive even numbers a, b, c, d, e, f and g is

(a) $(c+e)/4$ (b) b (c) $(a+g)/2$ (d) $(a+b+c+d)/4$

28. The mean, median and mode of the following data are respectively:

5, 17,21,21,7,13,1,3

(a) 12, 12, 21 (b) 21, 21, 21 (c) 11,10,21 (d) 11, 7. 21

29. The mean age of 29 students of a class is 11 years. If the age of their teacher is also included then the mean is increased by one year. What is the age of the teacher?

(a) 40 years (b) 51 years (c) 41 years (d) 55 years

30. The mean temperature of Day 1, Day 2 and Day 3 is $40°C$. The mean temperature of Day 2, Day 3 and Day 4 is $41°C$. If the temperature of Day 4 is $30°C$, then the temperature on Day 1 is:

(a) $31°C$ (b) $33°C$ (c) $41°C$ (d) $27°C$

31. The median of the following observations arranged in ascending order is 24, find x.

11, 12, 14, 18, $x+2$, $x+4$, 30, 32, 35 and 41.

(a) 10 (b) 23 (c) 21 (d) 26

32. What is the mean of n, $n+1$, $n+3$, $n+7$, and $n+9$?

(a) $n+2.5$ (b) $n+4$ (c) $n+6$ (d) $n+6.5$

33. Find out the marks in SST from pie chart given below, if the total marks be 540.
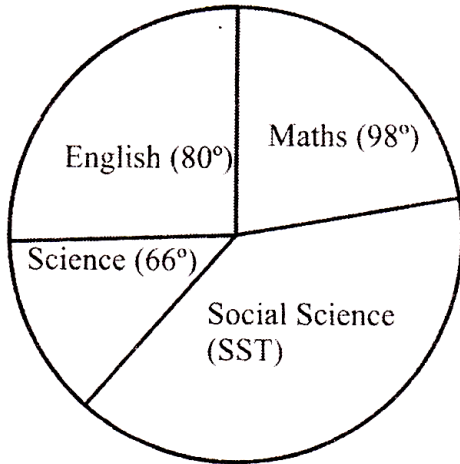
(a) 174   (b) 99   (c) 147   (d) 120°

34. The diagrammatic representation with the help of pictures is called:

(a) Histogram   (b) Pie chart   (c) Pictogram   (d) Bar chart

35. Which of these is certain to happen?

(a) You look older yesterday than today

(b) You look older today than yesterday

(c) A tossed coin will land heads up.

(d) Tomorrow will be a sunny day.

36. Which of these is impossible to happen?

(a) A tossed coin lands with heads up.

(b) A tossed die lands up with 3 on top.

(c) The next traffic light is green

(d) A die thrown lands up with 8 on top.

37. Which of these event has probability = 1 certainly?

(a) A tossed coin lands with heads up.

(b) The sim rises in the east.

(c) A die thrown lands with 3 on the top.

(d) The sun revolves around the earth.

Direction (38 to 39): The bar graph shows the marks obtained by four students in quarterly examination.
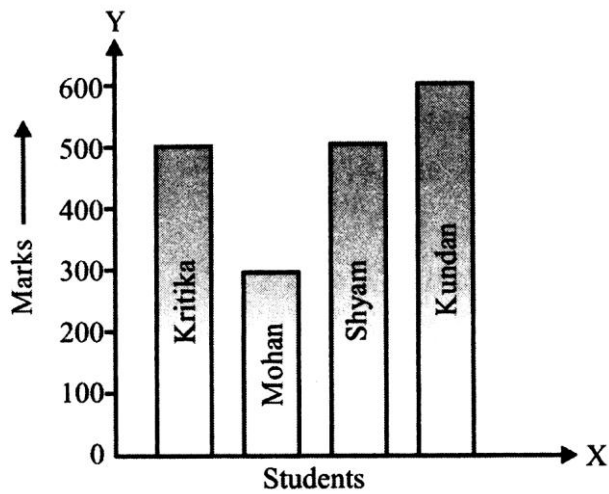
38. Whose performance was the best?

    (a) Kundan   (b) Kritika   (c) Shyam   (d) Mohan

39. Which two students secured equal marks?

    (a) Kritika & Mohan   (b) Kritika & Shyam

    (c) Mohan & Shyam   (d) Shyam & Mohan

40. The run scored by 11 member of a cricket team are: 34, 0, 29, 34, 69, 73, 69, 6, 0, 34, 96. If we represent the given data by using tally diagram, which score with have the highest frequency:

    (a) 0   (b) 34   (c) 69   (d) 96

ANSWER - KEY

1. A	2. A	3. A	4. B	5. A
6. D	7. B	8. C	9. D	10. D
11. B	12. D	13. C	14. C	15. B
16. A	17. A	18. D	19. A	20. B
21. D	22. A	23. C	24. A	25. D
26. A	27. C	28. C	29. C	30. D
31. C	32. B	33. A	34. C	35. B
36. D	37. B	38. A	39. B	40. B

SOLUTIONS

1. (A): Sum of 10 observations $=10\times 5.5=55$ with one more observation, sum of 11 observations $=11\times 6=66$

∴ 11th observation (new observation) $=66-55=11$

2. (A): Average duration $=\dfrac{40+50+60+x+30+90+90}{7}=60$

$\Rightarrow 150+x+210=60\times 7\Rightarrow x+360=420$

$\Rightarrow x=60$

3. (A): A.M $=\dfrac{\sum xi}{n}=\dfrac{2+........11}{10}=\dfrac{\left\{\left(1+...........11\right)-1\right\}}{10}$

$=\left\{\left(\dfrac{11\times 12}{2}\right)-1\right\}\Big/10=\dfrac{65}{10}=6.5$

We have purposely written it like this so that we get Gaussian identity. Which is sum of first 'n' natural numbers

$=\dfrac{n(n+1)}{2}$

4. (B): Add score of five matches and divide by

5. (A): Not Available

6. (D): $\dfrac{2+3+5+7+11+13+17}{7}=\dfrac{58}{7}$

7. (B): $\dfrac{1+1.5+2+1.5+0.9+2.7}{6}=\dfrac{9.6}{6}=1.6$

8. (C): Observations:

x_1	x_2	x_3	x_4	x_5

$x_1+x_2+x_3+x_4+x_5=5\times 7=35$

$x_1+x_2+x_3=5\times 3=15\Rightarrow x_4+x_5=20$

$x_3+x_4+x_5=9\times 3=27\Rightarrow x_1+x_2=8$

$\Rightarrow x_3=35-20-8=7$

You may learn to use this kind of a box way of arranging numbers x_1 to x_5. It will help you visualize tricky problems.
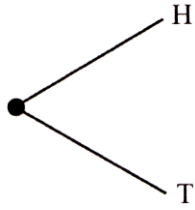
9. (D): $x_1+...........x_8=8\times 10=80$

Sum of seven nos. $=7\times 9=63$

∴ Excluded no $=80-60=17$

10. (D) Not available

11. (B)

12. (D): $P(tail) = \dfrac{500 - 280}{500} = \dfrac{220}{500} = \dfrac{11}{25}$

13. (C) Not available

14. (C) Not available

15. (B) Not available

16. (A) Not available

17. (A): $4 + y + 6 + x + 11 = 35 \Rightarrow x + y = 14$

18. (D) Not available

19. (A) Not available

20. (B) Not available

21. (D) Not available

22. (A) Not available

23. (C) Not available

24. (A) Not available

25. (D) Not available

26. (A) Not available

27. (C) Not available

28. (C) Not available

29. (C): $29 \times 11 = 319$; Also, $30 \times 12 = 360 \Rightarrow$ teachers age $= 360 - 319 - 41$

30. (D): Not Available

31. (C): $\dfrac{(x+2)+(x+4)}{2} = 24$

32. (B): Add five given numbers and divide by 5.

33. (A): $116 \times \dfrac{540°}{360°} = 174$

34. (C): Not available

35. (B): Not available

36. (D): Not available

37. (B): Not available

38. (A): Not available

39. (B): see height of bars

40. (B): 34 occurs 03 times