

Multiple Choice Questions

(1 mark each)

- The mean of 15 numbers is 25. If each number is multiplied by 4, then mean of the new number is
 (a) 60 (b) 100
 (c) 10 (d) None of these
- The median of a data is 20. If each item is increased by 2, then the new median will be
 (a) 40 (b) 10
 (c) 22 (d) None of these
- If the mean of x and $\frac{1}{x}$ is M , then the mean of x^3 and $\frac{1}{x^3}$ is
 (a) $M = \frac{M^2 - 3}{2}$ (b) $M(4M^2 - 3)$
 (c) M^3 (d) $M^3 + 3$

- If the mean of the following distribution is 2.6, then the value of y is

Variable (x)	1	2	3	4	5
Frequency	4	5	y	1	2

- (a) 3 (b) 8 (c) 13 (d) 24
- If $d_i = x_i - 25$, $\sum f_i d_i = 200$ and $\sum f_i = 100$, then \bar{x} is equal to
 (a) 27 (b) 25 (c) 30 (d) 35

Short Answer Type (I) Questions

(2 marks each)

- Calculate the median for the following data

Class Interval	130-139	140-149	150-159	160-169	170-179	180-189	190-199
Frequency	4	9	18	28	24	10	7

- The mean of 20 observations is 12. If each observation is increased by 5, then find the new mean.
- The mean of 6, $6 + 2x$, 5 and $8 + 3x$ is 20. Find the value of x .
- Find the missing frequencies in the following frequencies in the following frequency distribution, if it is known that the mean of the distribution is 1.46.

Number of Accidents (x)	0	1	2	3	4	5	total
Frequency (f)	46	?	?	25	10	5	200

Short Answer Type (II) Questions

(3 marks each)

10. Compute the median for the following cumulative frequency distribution.

Less than	20	30	40	50	60	70	80	90	100
cf	0	4	16	30	46	66	82	92	100

11. The mean of the following frequency table is 50 but the frequencies f_1 and f_2 in class intervals 20-40 and 60-80 are missing. Find the missing frequencies.

Class interval	0-20	20-40	40-60	60-80	80-100	Total
Frequency	17	f_1	32	f_2	19	120

Long Answer Type Questions

(5 marks each)

12. Find the mean, mode and median of the following data.

Class	Frequency
0-10	3
10-20	4
20-30	7
30-40	15
40-50	10
50-60	7
60-70	4

13. The median of the following data is 525. Find the values of x and y , if the total frequency is 100

Class interval	Frequency
0-100	2
100-200	5
200-300	x
300-400	12
400-500	17
500-600	20
600-700	y
700-800	9
800-900	7
900-1000	4

14. Compute the median from the following data.

Mid-value	115	125	135	145	155	165	175	185	195
Frequency	6	25	48	72	116	60	38	22	3

Answers

1. (b) 2. (c) 3. (b) 4. (b) 5. (a)
6. 166.29 7. 17 8. 11 9. $f_1 = 76$ and $f_2 = 38$
10. 62 11. $f_1 = 28$ and $f_2 = 24$ 12. (i) 37.4, (ii) 36.15, (iii) 37.3
13. $x = 9$ and $y = 15$ 14. 153.79

For Solution
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13. A copper wire 4 mm in diameter is evenly wound about a cylinder whose length is 24 cm and diameter 20 cm, so as to cover the whole surface. Find the length and weight of the wire assuming the specific density to be 8.88 gm/cm^3 .
14. A metal cube of 9 cm edge is melted and recast into three smaller cubes. If the edge of two of the smaller cubes are 1 cm and 6 cm. Find the edge of the third cube.

Long Answer Type Questions

(5 marks each)

15. A solid toy is in the form of a hemisphere surmounted by a right circular cone. Height of the cone is 3 cm and the diameter of the base is 5 cm. If a right circular cylinder circumscribes the solid, then find how much more space it will require.
16. A building is in the form of a cylinder surmounted by a hemispherical vaulted dome which contains 17.7 m^3 of air and its internal diameter is equal to the height of the

