

IMPORTANT QUESTIONS ON SMDM: PART – 1

Q1. Write a brief note on the application of statistics in business and industry.

Q2. Define statistics and statistical methods. Explain the uses of statistical methods in modern business.

Q3. Explain the purpose of tabular presentation of statistical data. Draft a form of tabulation to show the distribution of population according to (i) community by age, (ii) literacy, (iii) gender and (iv) marital status.

Q4. Draw Histogram and less than Ogive for the data represented in the following table. Find Median & Mode Graphically.

Temperature	Frequency
0-10	2
10-20	7
20-30	11
30-40	17
40-50	9
50-60	3
60-70	1
Total	50

Q5. The following data shows the distribution of expenditure (in Rs.million) of a company under the different heads

Heads	Raw Materials	Taxes	Manufacturing Expenses	Employees cost	Depreciation	Dividends	Retained Income	Other Expenses
Expenditure	1689	582	543	470	94	75	51	286

Draw a Pie chart to represent the data

Q6. Discuss all the stages of statistics in brief.

Q7. What are the requirements of a good average? Compare the mean, the median and the mode in the light of this? Why averages are called measures of central tendency?

Q8. The following are the net profit figures earned by 50 companies in the country

Profit (in Rs.Crore)	No. of Companies
10 or less	4
20 or less	10
30 or less	30
40 or less	40
50 or less	47
60 or less	50

Find (a) Mean, Median, and Mode.

(b) also find Quartiles, 4th decile, and 45th percentile

Q9. (a) Given the following frequency distribution with some missing frequencies:

Class	Frequency
10-20	185
20-30	---
30-40	34
40-50	180
50-60	136
60-70	---
70-80	50

If the total frequency is 685 and median is 42.6, find out the missing frequencies.

(b) Given the following frequency distribution of sales per day of an item for 20 days period with some missing frequencies. If the modal sale is 62.5 units, find the missing frequencies

Sales volume (Class interval)	No. of days (Frequency)
53-56	2
57-60	----
61-64	5
65-68	---
69-72	4
72 and above	1

Q10. (a) The mean monthly salaries paid to 100 employees of a company were Rs.5000. The mean monthly salaries paid to male and female employees were Rs. 5200 and Rs.4200 respectively. Determine the percentage of male and female employed by the company.

(b) The price of a certain commodity in the first week of January is 400 g per rupee; it is 600 g per rupee in the second week and 500 g per rupee in the third week. Is it correct to say that the average price is 500 g per rupee? Verify.

Q11. (a) Write the characteristics of a good measure of central tendency.

(b) Three groups of observations contain 8, 7, and 5 observations. The geometric mean of each group is 8.52, 10.12, and 7.75 respectively. Find the combined geometric mean of all the three groups.

Q12. Find Range, Coefficient of Range, Quartile deviation, Coefficient of Quartile deviation of the following data. Also calculate Mean Deviation (Mean) and Standard Deviation.

Class	Frequency
10 – 20	10
20 – 30	20
30 – 40	40
40 – 50	50
50 – 60	40
60 – 70	30
70 – 80	10

Q13. The following data concerns return from equity stocks of ITC and HUL

Period	Return (in %)	
	ITC	HUL
2014	15%	12%
2015	20%	13%
2016	16%	15%
2017	22%	14%
2018	19%	16%
2019	24%	15%

- Calculate the mean and standard deviation of the returns from ITC and HUL Stock
- If an investor want to maximize his returns and is unmindful of the risk involved, which stock should he choose for investment?
- If an investor want to minimize his risk and is unconcerned about the return, which stock should he choose for investment?
- Compute the coefficient of variation for the return of two stocks and comment on them.

Q14. Calculate the mean absolute deviation and its coefficient from mean as well as median for the following data:

Year	Sales (Rs.Crore)
2015	23
2016	41
2017	29
2018	53
2019	38

Q15. A purchasing agent obtained samples of 60 watt bulbs from two companies. He had the sample tested for the length of life with the following results:

Length of life (in hours)	Sample from	
	Company A	Company B
1700-1900	10	3
1900-2100	16	40
2100-2300	20	12
2300-2500	8	3
2500-2700	6	2

- Which company's bulbs do you think are better in term of average life?
- If price of both the companies are same, which company's bulbs would you buy and why?

Q16. In two factories A and B engaged in same industry, the average daily wages and standard deviation are as follows:

Factory	Average daily wages (Rs.0)	S.D. of wages (Rs.)	No. of wage earners
A	460	50	100
B	490	40	80

- (a) Which factory, A or B, pays a higher amount as weekly wages?
- (b) Which factory shows greater variability in the distribution of wages?
- (c) What is the mean and standard deviation of all workers in two factories taken together?