Probability and Statistics (BMAT202L)

Tutorial Sheet- 1

1. A certain number of salesmen were appointed in different territories and the following data were compiled from their sales reports

Sales (Thousands Rs.)	4-8	8-12	12-16	16-20	20-24	24-28	28-32	32-36	36-40
No. of salesmen	11	13	16	14	?	9	17	6	4

   If the average sales is believed to be Rs. 19920, then find missing frequency.

2. Calculate the mean and median for the following statistical distribution

Value	Less than 100	100-200	200-300	300-400	400 and above	total
Frequency	50	90	158	68	134	500

3. Eight coins were tossed together and number of heads resulting was noted. The operation was repeated 256 times and the frequency distribution of the number of heads is given below

No. of heads	0	1	2	3	4	5	6	7	8
Frequency	1	9	26	59	72	52	29	7	1

   Calculate the median.

4. The following table gives the distribution of marks secured by some students in a certain examination:

Marks	0-20	21-30	31-40	41-50	51-60	61-70	71-80
No.of students	42	38	120	84	48	36	31

   Find (i) median marks

   (ii) the percentage of failure, if minimum for pass is 35 marks.

5. An incomplete frequency distribution is given as follows:

Variable	10-20	20-30	30-40	40-50	50-60	60-70	70-80	Total
Frequency	12	30	?	65	?	25	19	230

   You are given that the median value is 46.

   i. Find all missing frequencies

   ii. Calculate the arithmetic mean

6. The mean salary paid to 1000 employees of an establishment was found to be Rs. 180.40. Later on, after disbursement of salary, it was discovered that the salary of two employees was wrongly entered as Rs. 297 and Rs.165. Their correct salaries were Rs. 197 and Rs. 185. Find the correct arithmetic mean.

7. Find the mean and mode of the following data:

Percentage of marks	10-19	20-29	30-39	40-49	50-59	60-69	70-79
Students	8	19	29	36	25	13	4

8. Calculate the Mean deviation from mean for the following data:

Marks	0-10	10-20	20-30	30-40	40-50	50-60	60-70
No.of students	6	5	8	35	7	6	3

9. Find the range, all three quartiles, quartile deviation, coefficient of dispersion, mean deviation about mean, standard deviation and variance for the following distribution:

Class Interval	0-2	2-4	4-6	6-8	8-10	10-12
frequency	5	16	13	7	5	4

11. A distribution consists of 25 measurements; it was found that the mean and standard deviation are 36 cm and 12 cm. After these results were calculated, it was noticed that 2 measurements were wrongly recorded as 60 cm and 36 cm, instead of 40 cm and 3 cm. find the corrected values of the mean and standard deviation.

12. Lives of two modes of refrigerators recorded in a received survey are given in the following table. Find the average life of each model. Which model shows more uniformity?

Life (no. of years)	0-2	2-4	4-6	6-8	8-10	10-12
Model A	5	16	13	7	5	4
Model B	2	7	12	19	9	1

13. Find the mode of the following data:

Class Interval	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
frequency	5	8	7	12	28	20	10	10

14. The median and mode of the following wage distribution are known to be Rs. 3,350 and Rs. 3,400 respectively. Find the values of f_3, f_4 and f_5.

Wages (Rs.)	0-1000	1000-2000	2000-3000	3000-4000	4000-5000	5000-6000	6000-7000
No. of employees	4	16	f_3	f_4	f_5	6	4

15. Calculate the Moments, Skewness and Kurtosis from the following grouped data

Class Interval	0-2	2-4	4-6	6-8	8-10	10-12
frequency	3	4	2	1	6	8

16. Calculate the Moments, Skewness and Kurtosis from the following grouped data

Class Interval	2-6	6-10	10-14	14-18	18-22	22-26
frequency	4	8	5	6	9	3