

STA201 Assignment 2

Question 1

Suppose that 100 students are enrolled in a statistics class and the following are the test scores received by them:

94	44	34	30	28	60	52	60	55	80
31	46	42	14	67	29	86	62	63	91
35	77	44	87	25	83	32	33	16	41
19	100	97	31	90	89	26	47	51	30
81	31	35	39	52	71	12	72	39	45
30	37	10	70	13	91	57	22	37	67
41	52	67	70	77	69	89	64	40	55
70	39	91	36	74	50	62	12	53	47
75	24	34	52	64	18	44	71	58	75
43	31	50	64	66	92	41	90	64	64

- Organize the data in classes such as 10 – 20, 20 – 30 and so on
- Using the above data draw histogram, frequency polygon, ogive and stem leaf plot.
- Find the mean median and mode for the given data.

Question 2

The following data set represents the record high temperatures in degree Fahrenheit (°F) for each of the 50 US states:

106	98	96	108	90	93	89	103	104	119
111	85	87	102	85	109	93	120	98	102
90	96	114	108	91	100	96	105	89	96
107	99	113	125	88	122	110	85	99	90
93	102	123	110	111	101	92	96	89	116

- Construct a suitable frequency distribution table using interval 85 – 95, 95 – 105 and so on.
- Determine the modal temperature.
- Determine the proportion of states having temperature that is more than modal temperature.

Question 3

180 furniture factories have the following distribution of average number of workers in various income groups:

Income Groups:	800 - 1000	1000 - 1200	1200 – 1400	1400 – 1600	1600 – 1800
Number of firms:	45	37	27	30	41
Average Number of Workers:	12	16	6	9	7

Find the mean salary paid to the workers.

Question 4

The mean of 250 observations was 58. Later on, it was found that two observations were misread as 82 and 9 instead of 182 and 98. Find the correct mean.

Question 5

The mean monthly salaries paid to 100 employees of a company were tk. 5000. The mean monthly salaries paid to male and female employees were tk. 5200 and tk. 4200 respectively. Determine the percentage of males and females employed by the company.

Question 6

A charitable organization decided to give Old-age pension to people over sixty years of age. The scales of pension were fixed as follows (see Table 1) and the ages of persons who secured the pension are given in table 2:

Table 1: Pension policy		Table 2: Age of Employees				
Age Group	Pension /Month	68	69	75	67	69
60 – 65	250	81	79	79	70	82
65 – 70	350	67	68	75	85	62
70 – 75	450	61	65	76	64	66
75 – 80	550	69	64	71	82	60
80 - 85	650					

Determine –

- How much money would the organization need to pay by way of pension?
- What shall be the average pension payable person and the standard deviation?

Question 7

The traffic noise levels on two city streets were measured on weekdays, between 5.30 a.m. and 8.30p.m. There were 92 measurements on each street, made at equal time intervals and the results are summarized in the following grouped frequency table.

Noise level (dB)	<65	65 – 67	67 - 69	69 - 71	71 – 73	73 – 75	75 - 77	77 – 79	79<
Street 1 Frequency	4	11	18	23	16	9	5	4	2
Street 2 Frequency	2	3	7	12	27	16	10	8	7

- On the same axes, draw cumulative frequency graphs for the two streets.
- Determine the Mean, Median and Modal noise level in each of the street.

Question 8

The time intervals (in second) between telephone calls received at an office were monitored on a particular day. The first 51 calls after 9.00 a.m. gave the following 50 intervals.

55	56	78	112	142	140	60	50	127	95
83	63	93	55	66	89	134	92	127	126
85	132	21	65	5	9	87	23	88	49
146	112	87	86	68	61	147	34	146	6
25	83	89	121	149	61	78	6	114	103

- Illustrate the data with a stem and leaf diagram
- Using the information obtained from the stem and leaf diagram determine the mean, median and mode.

Question 9

Suppose you are traveling from Chittagong to Cox's Bazaar by car. The distance between Cox's Bazaar and Chittagong is 150 km. You drive your car for the first 50 km at a speed of 30 km/h, the second 50 km at a rate of 40 km/h and the remaining 50 km at a speed of 20 km/h. What is the average speed with which you traveled from Chittagong to Cox's Bazaar?

Question 10

An antique art piece was acquired for \$250,000. It is predicted to increase in value by 50% in the first year and 25% each year from the second year onward. What will its value be after 5 years?