Central University of Rajasthan

Department of Statistics

STA 102 Practical Questions

1. Students graduate and undergraduate where enrolled in a statistics course their ages were:-data:-18,19,19,19,19,20,20,20,20,20,21,21,21,21,22,23,24,27,30,36
   a) Enter the above data in MS-Excel
   b) Find the median age of all students
   c) Find median age of all students under 25 years and mode of all the students.
   d) Find A.M, G.M, and H.M of all the students.
   e) If 2 more students of age 19 are entered in the class, what will be mean, median, mode, H.M, and G.M.

2. A household with a monthly salary of Rs. 7200 plans his budget for a month as given below:

Item	Food	Rent	Education	Savings	Misc.	Total
Amount (Rs.)	3000	800	1200	1500	700	7200

   Construct a bar plot and pie chart for above data.

3. Construct the multiple and subdivided bar plot for the data given below

Year	Sales (Rs.)	Gross Profit (Rs.)	Net Profit (Rs.)
1974	100	30	10
1975	120	40	15
1976	130	45	25
1977	150	50	25

4. An engineer observing a nuclear reaction measures time intervals b/w emissions of beta particles following are the inter arrival time:-
   -0.894 0.235 0.071 0.459 0.100 0.991 0.424 0.159 0.431 0.919 0.000 0.061 0.216 0.082 0.092 0.900 0.186 0.579 1.653 0.830 0.093 0.311 0.429 2.010 1.718 0.041 0.817 0.612 0.158 0.099 0.712 2.267 0.143 0.527 0.162 0.994 0.091 0.055 1.033 0.076 0.149 0.139 0.752 2.863 0.107 0.866 0.083 0.188 0.365 0.278 0.054
   a) Find the Mean, Median and plot the histogram of above data.
   b) Obtain variance, mean absolute deviation about mean, median absolute deviation about median, and standard deviation.
   c) Obtain raw, central moments, Pearson's coefficient of skewness and kurtosis.

5. Marks in Statistics out of 100 are obtained by 250 candidates selected at random from among those appearing in a certain examination are given as.
   32 47 41 51 41 30 39 18 48 53 54 32 31 46 15 37 32 56 42 48 38 26 50 40 38 42 35 22 62 51 44 21 45 31 37 41 44 18 37 47 68 41 30 52 52 60 42 38 38 34 41 53 48 21 28 49 42 36 41 29 30 33 31 35 29 37 38 40 32 49 43 32 24 38 38 22 41 50 17 46 46 50 26 15 23 42 25 52 38 46 41 38 40 37 40 48 45 30 28 31 40 33 42 36 51 42 56 44 35 38 31 51 45 41 50 53 50 32 45 48 40 43 40 34 34 44 38 58 49 28 40 45 19 24 34 47 37 33 37 36 36 32 61 30 44 43 50 31 38 45 46 40 32 34 44 54 35 39 31 48 48 50 43 55 43 39 41 48 53 34 32 31 42 34 34 32 33 24 43 39 40 50 27 47 34 44 34 33 47 42 17 42 57 35 38 17 33 46 36 23 48 50 31 58 33 40 26 29 30 37

47 55 57 37 41 54 42 45 47 43 37 52 47 46 44 50 44 38 42 19 52 45 23 41 47 33 42 24 48 39 48 44 60 38 38 44 38 43 40 48.

(i) Make frequency table of above data.
(ii) Make Continuous Frequency table.
(iii) Find Mean, Median, Mode based on frequency table.
(iv) Obtain variance and standard deviation based on frequency table.
(v) Make Histogram of above data based on frequency table.
(vi) Obtain raw, central moments, Pearson's coefficient of skewness and kurtosis based on frequency table.

6. Draw frequency polygon, ogive curves for the following data

Seed Yield	2.5-3.5	3.5-4.5	4.5-5.5	5.5-6.5	6.5-7.5	7.5-8.5	8.5-9.5	9.5-10.5
No. of Plants	4	6	10	26	24	15	10	5

Obtain mode and quartiles using ogive curves.

7. Compute mean, median and mode for the following frequency distribution:-

X	145-150	150-155	155-160	160-165	165-170	170-175	175-180	180-185
F	4	6	28	58	64	30	5	5

Obtain mode and quartiles using ogive curves.

8. An entomologist studying morphological variation species of mosquitoes recorded the following data on body length:-
1.2,1.4,1.3,1.6,1.0,.1.5,1.7,1.1
Compute all measures of dispersion (Range, Interquartile range(IQR) , coefficient of quartile deviation, coefficient of variance, mean deviation about mean).

9. Find the mean, mode, median for given dataset.

X	0	1	2	3	4	5	6	7
f	8	11	16	15	10	5	3	2

10. Find the harmonic mean and geometric mean for given dataset.

X	2	3	4	5	6	7	8	9	10	11	12
F	1	3	5	7	7	6	5	5	4	2	4

11. Find the mode by group method of the following frequency distribution:

X	1	2	3	4	5	6	7	8	9	10	11	12
F	3	8	15	23	35	40	32	28	20	45	14	6

12. Consider the bivariate data given below

Temperature	120	125	130	135	140	145	150	155	160	165
Strength	18	22	28	31	36	40	47	50	52	58

a) Plot a scatter plot of variables temperature and strength.
b) Obtain product moment correlation and Spearman Rank correlation.
c) Fit a straight line to the above data (***Strength=a + b * Temperature).***

13. Obtain the correlation coefficient for given bivariate frequency data.

Class-X/Class-Y	10 - 20	20 - 30	30 - 40	40 - 50	50 - 60
15 - 25	6	3	0	0	0
25 - 35	3	16	10	0	0
35 - 45	0	10	15	7	0
45 - 55	0	0	7	10	4
55 - 65	0	0	0	4	5