

- **Answer all questions**
- **Draw diagrams wherever necessary**

Essays:

(8x10=80)

1. Name any three different measures of central tendency and describe each of them. Calculate the arithmetic mean for the following data:

Marks	Number of students
0-10	12
10-20	18
20-30	27
30-40	20
40-50	17
50-60	6

2. What do you understand by the term confidence interval.

You have measured 120 subjects on a particular scale. The mean is 75 and SD is 6. Calculate the standard error of the mean and 95%, 99% confidence intervals.

Calculate the confidence interval for the difference in means for the data given below:

Referral data inventory score (RTI) is used to measure the amount and type of information an extended care facility receives on referral of an elderly person from hospital. There are two groups of patients compared 1 – those who smoked and 2 – those who never smoked.

The mean RTI among 273 smokers was 57.61 with SD 16.5 where as the mean among 49 never smoked group was found to be 62.9 with SD 13.6. Calculate the 95% CI for the difference in means and interpret the results assuming that RTI score is normally distributed.

3. The following table gives for a sample of married women with their level of education and marriage adjustment score categorized as very low, low, high and very high:

		Very Low	Low	High	Very High
Level of Education	College	24	97	62	58
	High School	22	28	30	41
	Middle School	32	10	11	20

Can you conclude from the above that “higher the level of education, greater is the degree of adjustment in marriage”.

4. Explain when correlation and regression are used in statistical analysis.

5. Explain normal, binomial distribution.

6. Why is sample size calculation necessary for any study. A researcher needs to know how many subjects he needs to study in order to find the incidence of upper respiratory tract infection (URI) among children. The children were taken from schools which were randomly selected from 9 districts as the list of schools was available for each district. The literature reported that the incidence of URI was 20%. The researcher anticipated that the incidence in his area of research had 50% variability of that reported in the literature. Calculate the sample size with 95% confidence limits with a design effect of 1.5 and 2 respectively.

7. Describe the different statistical measurements used in Case Control study and Cross sectional study

8. Explain the steps involved in testing the difference between two means.
