

Mid-West University  
Examinations Management Office  
Birendranagar, Surkhet

End Semester - Examination, 2080

**Subject: RD 525-Statistical Methods for Social Science Research**

FM: 60

Level/program: Master (M.A)

Semester: II

Time: 3 Hours

PM: 30

*Candidates are required to answer the questions in their own words as far as practicable.*

**Attempt ALL of the following Very Short Answer Questions.**

**10x1=10**

1. Find the mode of the following data:  
50, 25, 35, 30, 10, 20, 50, 15, 50.
2. What is the standard deviation is considered the most popular measure of dispersion?
3. What is Gini coefficient?
4. What is equally likely event?
5. Define random variable.
6. Write any three properties of Normal distribution?
7. Write a short note about the concept of universal and sample.
8. Write the types of correlation.
9. What are properties of regression coefficient?
10. What is relation between Z-test and t-test?

**Attempt any Three of the Following Long Questions.**

**3x8 =24**

11. Write down the merits and demerits of standard deviation. Calculate the standard deviation and coefficient of S.D. from the following series:

Marks:	0-5	5-10	10-15	15-20	20-25	25-30
No. of Students:	3	7	2	8	6	4

12. Write down steps of drawing the Lorenz curve. Draw a Lorenz curve for the following data:

No of persons	13	10	5	4	1
Wealth(000 Rs.)	78	100	75	80	25

13. What is permutation and combination? If a card is drawn from a pack of cards. Find the probability of getting:
  - a. What is the probability a king or a queen?
  - b. What is the probability a club card or a spade card?
14. Define z-test. An educator claims that the average IQ of college student is at most 110, and that in a study made to test this claim 150 college students, selected at random, had an average IQ of 111.2 with a standard deviation of 7.2. Use a level of significance of 0.01 to test the claim of the educator.

**Attempt any TWO of the Following Long Questions.**

**2x13 =26**

15. Define estimation and briefly describe about the point and interval estimation.
16. Define Regression analysis. Find the two regression equation from the following data:

Aptitude score(x)	57	58	59	59	60	61	62	64
Productivity index(y)	67	68	65	68	72	72	69	71

Also find the score are 66.

17. What is hypothesis testing? Write down the process of hypothesis testing. What is Chi-square test? A professor of statistics, who regularly bets on horses wants to test if the post position has any influence on a horse winning or losing. He records the post positions of the winners of 300 randomly selected races. There are 5 post positions. The observed frequency of winners at each post is given as follows:

Post position	1	2	3	4	5
No. of Winners	50	65	48	78	59

At a significance level of 5% can the professor conclude that some post positions are more favorable than others.