



Civil Engineering Department

Final Term Examination (Fall Semester-2020)

Subject: Probability & Statistics
Instructor: Anwar Shamim

Duration: 06 Hours
Total Marks: 80

Note: Attempt all questions. Manage your time properly.

Q.No. (01)

(15+15)

(a) Calculate the correlation coefficient between X and Y.

Price (X)	3	4	5	6	7	8	9	10	11	13
Demand(Y)	25	24	20	20	19	17	16	13	10	8

(b) Given the following set of values.

X	20	11	15	10	17	18	21	25	28
Y	5	15	14	17	8	9	12	16	18

(a) Determine the equation of the least squares regression line of Y on X and X on Y.

(b) Find the predicted values of Y for X = 20, 11, 15, 25, 28 and X for Y = 5, 15, 9, 12, 16, 18.

Q.No. (02)

(10+10)

Find the following

- (a) A fair coin is tossed 5 times. Find the probabilities of obtaining various numbers of heads.
- (b) A and B play a game in which A's probability of winning is $\frac{2}{3}$. In a series of 10 games, what is the probability that A will win (i) at least 4 games, (ii) Exactly equal to 4/10 games. (iii) Exactly equals to 11 games (iv) 6 or more games.

Q.No. (03)

(15+15)

The following figures give the number of children born to 50 women

2	6	1	5	4	3	3	8	10	1
4	3	3	0	5	2	1	4	10	3
5	3	3	6	3	3	2	2	7	4
1	4	2	4	4	4	6	8	10	7
7	5	6	5	3	2	3	9	6	3

- (a) Construct the ungrouped frequency distribution of these data.
- (b) Construct the grouped frequency distribution of these data,