DOON UNIVERSITY, DEHRADUN
Final-Semester Examination, 2015
School of Social Sciences
Msc. Economics Integrated (First Semester)
Course Code: SSEI-114 Statistical Methods I

Time Allowed: 3 Hours   *Maximum Marks: 50*

Note: Attempt All Questions from Sections A & Section B & any two questions from Section C.

~~*Use of Simple calculators are allowed.*~~

Good luck☺

Section A (Attempt all questions)   (10 marks)

1) If value of Mode> Median, the data is _____ skewed.
2) If $\beta2$= 6.8 it signifies that the distribution is _____
3) In the theory of probability, Zero denotes _____ Support your answer with an example.
4) If the value of bxy = 0.2 and byx= 1.6, can you obtain the value of r? Also interpret the value.
5) In how many ways the alphabets of the word "IMPOSSIBLE" can be arranged?
6) If we want to change the scale of the values we _____ every value of X and Y variables by some constant.
7) If the value of r=+0.72 and N=5, does it conclude that there is high degree of correlation between variables? Justify it with the help of Probable error.
8) If two dice are thrown together, what is the probability of obtaining:
   a) Exactly 11
   b) At least 10

Section B (Attempt all questions)   (5*4=20 marks)

1. A computer while computing the correlation coefficient between two variables X and Y from 25 pairs of observations obtained the following results:

   $\sum X$= 125, $\sum X^2$=650; $\sum Y$=100 $\sum Y2$=460, $\sum XY$=508

   It was however discovered at the time of checking that he had copied down two pairs as

X	Y
6	14
8	6

   Whereas the correct values were:

X	Y
8	12
6	8

   Obtain the correct values of correlation coefficient.

2. Calculate the coefficient of skewness with the suitable formula:

Measure	Place A	Place B
Mean	256.5	240.8
Median	201.1	201.6
S.D	215.0	181.0

3. In a product testing procedure, each radio on an assembly line must pass two inspection points before packaged for shipment. The probability is $P_1 = 0.7$ that a defective radio is detected at the first point and $P_2 =).8$ that a defective radio is defected at the second inspection point. What is the probability that a defective radio will be packaged for shipment?

4. Explain the following with the help of an example:
   A) Mutually exclusive Events & Exhaustive events
   B) Dependent & Independent events
   C) Subjective Approach
   Or

The first four moments of a distribution about x=4 are 1,4,10 and 45. Obtain the various characteristics of the distribution on the basis of information given. Comment upon the nature of the distribution.

Section C (Attempt any two questions)   **(2*10= 20 marks)**

1. A) Three groups of workers contain 2 men and 2 women, 1 man 3 women, 3 men 1 woman, one person is selected at random, what is the probability that the group selected at random contains 1 woman & 2 women.
   B) The probabilities of Abhay, Aakash and Abhishek becoming managers are 3/9, 2/9 and 1/4 respectively. The probabilities that the Petrol allowance will increases if they become mangers are 3/10, 1/3 and 4/5 respectively.
   a) What is the probability that the allowance scheme will be introduced?
   b) What is the probability that if it is introduced it is introduced by Aakash?

2. Calculate coefficient of skewness by Karl Pearson's method and the values of derivatives of skewness and kurtosis.

Profits (Rs.Lakh)	10-20	20-30	30-40	40-50	50-60
No. Of Companies	18	20	30	22	10

3. From the following data compute the coefficient of correlation between age of husbands and wives:

Age of husbands	Age of Wives						
	15-25	25-35	35-45	45-55	55-65	65-75	Total
15-25	1	1	-	-	-	-	2
25-35	2	12	1	-	-	-	15
35-45	-	4	10	1	-	-	15
45-55	-	-	3	6	1	-	10
55-65	-	-	-	2	4	2	8
65-75	-	-	-	-	1	2	3