

14/12/23



DOON UNIVERSITY, DEHRADUN
End Semester Examination, 3rd Semester, 2023
Academic Year 2023-24 (Odd Semester)
School of Social Sciences, Department of Economics
Programme Name: B.Sc. Economics
Course Code with Title: ECC-202 Statistics-I

Time Allowed: 2.00 Hours

Maximum Marks: 50

INSTRUCTIONS:

1. *There are three sections.*
2. *Section A consists of five questions. All questions are compulsory in this section.*
3. *Section B consists of four questions. Each question carries five marks in this section.*
4. *Section C comprises three questions. Attempt any two questions. Each question carries ten marks in this section.*
5. *Any candidate found using a scientific calculator during the examination will face immediate disqualification and potential disciplinary actions.*

SECTION: A -All questions are compulsory (5*2 =10 marks)

- Ques 1.** Explain the terms Correlation and Regression and their utility in Economic analysis.
Ques 2. If S.D =4.5, N= 20, $\Sigma X = 250$, Calculate Coefficient of Variance.
Ques 3. Find out the Range and Its Coefficient from the following data:

4	-10	0	-2	-8	10	7	2	-5	0
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- Ques 4.** Distinguish between positive and negative correlation. Explain the interpretation of correlation with the help of a scatter diagram.
Ques 5. Differentiate between the Association coefficient and coefficient of correlation.

SECTION: B- All questions are compulsory (4*5= 20 marks)

Ques 6. In a partially destroyed laboratory record of an analysis of correlation data, the following results only are legible:

Variance of X = 9

Regression equations:

$$8X - 10Y + 66 = 0$$

$$40X - 18Y = 214$$

Based on this calculation calculate:

1. Mean value of X and Y
2. Coefficient of correlation between X and Y
3. S.D of Y

Ques 7. In a state with a total population of 70,000 adults, 34,000 are males and out of a total of 6,000 graduates, 700 are females. Out of 1,200 graduate employees of the state 200 are females.

- i. Is there any sex bias in education among the people?
- ii. Also examine the claim of the state that no distinction is made in appointments in respect of sex.

Ques 8. Calculate the coefficient of correlation by mean of ranking method from the following data:

X	48	33	40	9	16	16	65	24	16	57
Y	13	13	24	6	15	4	20	9	6	19

Ques 9. Calculate Quartile Deviation and Its Coefficient from the following data:

X	120	122	124	126	130	140	150	160
f	1	3	5	7	10	3	1	1

SECTION: C- Attempt any two (2*10=20 marks)

Ques 10. From the following table, calculate Karl Pearson's coefficient of correlation between the age of husband and wife:

Age of wives (years)	Age of Husband (years)					Total
	20-30	30-40	40-50	50-60	60-70	
55-65				4	2	6
45-55			4	16	5	25
35-45		1	12	2		15
25-35		10	25	2		37
15-25	5	9	3			17
Total	5	20	44	24	7	100

Ques 11. The following table shows the distribution of students of two classes in a school according to weight. Calculate the coefficient of Variation of each series and show which series has more variation:

Weight (kg)	Class IV	Class V
10-20	7	5
20-30	10	9
30-40	20	21
40-50	18	15
50-60	7	6
Total	62	56

Ques 12. Calculate Bowley's Coefficient of skewness from the following data:

Marks	15-25	25-35	35-45	45-55	55-65	65-75
f	1	3	7	11	5	3