

Goa Vidyaprasarak Mandal's  
GOPAL GOVIND POY RAITURCAR COLLEGE OF COMMERCE AND ECONOMICS  
PONDA - GOA  
B.COM. CBCS (SEMESTER – IV) EXAMINATION  
JULY 2021  
BUSINESS STATISTICS - II

Duration: 2 hours

Marks: 40

- INSTRUCTIONS:** i) Attempt all questions.  
ii) Figures to the right indicate full marks.  
iii) Use of non - programmable calculator is allowed.  
iv) Graph paper may be used wherever necessary.

Q 1. Answer the following: (Any **five**)

(5 x 2 = 10)

- The coefficient of rank correlation for a certain data is found to be 0.6. If the sum of the squares of the differences in ranks is 48, find the number of items in the group.
- A committee of four is to be formed from 10 boys and 1 girl. Find the probability that the girl is included.
- Explain what is meant by systematic sampling.
- A random sample of 700 units from a large consignment showed that 200 were damaged. Find 99% confidence limits for the proportion of damaged units in the consignment.
- For a bivariate data, means of x and y are 65 and 67, standard deviation of x and y are 2.5 and 3.5 respectively. The coefficient of correlation is 0.6. Write the regression equation of x on y.
- If it rains, a dealer in umbrellas can earn ₹300 per day. If it does not rain, he can lose ₹80 per day. What is his expectation if the probability of a rainy day is 0.57?
- Estimate  $y_2$  from the following data

x	1	2	3	4
$y_x$	281	-	313	322

- A hits 20 out of 30 targets. In a series of 5 games, what is the probability that A will hit 3 targets?

Q 2. Answer the following: (Any **six**)

(6 x 5 = 30)

- From the following table, calculate the coefficient of correlation by Karl Pearson's method

x	6	2	10	4	8
y	9	11	?	8	7

Arithmetic means of x and y are 6 and 8 respectively.

- The probability that a person visiting an automobile showroom will buy a car is 0.3 and that of his buying a two wheeler is 0.6. If the probability that he buys both a car and a two wheeler is 0.1, find the probability that he buys i) none of the vehicles ii) at least one of the vehicles

3. A sample of 100 households in a village is taken and the average income was found to be ₹628 per month with a SD of ₹60 per month. Test the claim that the average income of all the people in the village is ₹640 per month at 1% L.O.S

4. From the following data, obtain an estimate of  $f(15)$

x	10	20	30	40	50
f(x)	46	66	81	93	101

5. Find the production corresponding to rainfall of 40 inches from the following data

	Rainfall	Production
Average	30 inches	500 kg
Standard deviation	5 inches	100 kg

Coefficient of correlation is 0.8

6. 2000 candidates appeared for an examination. The mean marks were 59 and standard deviation was 5. Assuming the distribution to be normal, find the number of candidates securing

i) more than 64 marks ii) marks below 49.

(Area under the standard normal curve between i)  $t = 0$  and  $t = 1$  is 0.3413

ii)  $t = 0$  and  $t = 2$  is 0.4772)

7. Using Lagrange's interpolation formula, find  $f(4)$  from the following data

x	0	1	2	3
f(x)	1	0	1	10

8. The average number of complaints received by a supermarket per day is 3.3. Find the probability of i) exactly 2 complaints ii) at least 2 complaints on a given day?

(Given  $e^{-3.3} = 0.037$ )

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