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

Duration: 2 hours   **Marks: 40**
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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)

1. The coefficient of rank correlation between the marks in Statistics and marks in Economics obtained by for a certain group of students is 0.8. If the sum of the squares of the differences in ranks is given to be 33, find the number of students in the group.

2. Define Sample Space. Write the sample space for three coins tossed simultaneously.

3. What is cluster sampling? Give an example.

4. A sample of 50 bulbs from a large consignment showed a mean life 52 hours with a standard deviation of 4 hours. Find the 95% confidence limits for the mean life of the bulbs.

5. If $\bar{x} = 100$, $\bar{y} = 18$, $\sigma_x = 20$, $\sigma_y = 14$, r = 0.8, obtain the regression equation of y on x.

6. If a man purchases a raffle ticket he can win a first prize of ₹ 5000 or a second prize of ₹ 2000 with probabilities 0.001 and 0.003. What should be a fair price to pay for the ticket?

7. Estimate y_2 from the following data

x	1	2	3	4
y_x	281	-	313	322

8. A coin is tossed 4 times. What is the probability of getting at least 3 heads?

Q 2. Answer the following: (Any **five**)   (5 x 6 = 30)

1. Calculate the coefficient of correlation by Karl Pearson's method for the following data

x	3	7	9	10	14
y	5	6	12	8	16

2. The probability that a student passes in Physics is 2/3 and the probability that he passes in both Physics and English is 14/45. The probability that he passes in at least one subject is 4/5. What is the probability that he passes in English?

3. A random sample of 400 has sample proportion 0.75. Can we say that it is drawn from a population with proportion 0.8 at 5% L.O.S.?

4. Find f(3) for the following data

x	0	5	10	15	20
f(x)	1.0	1.6	3.8	8.2	15.4

5. From the following data about the production and demand of a commodity, estimate the production when demand is 100

	Production	Demand
Mean	85	90
Standard deviation	5	6

Coefficient of correlation is 0.65.

6. It is known that the marks scored by 1000 students are normally distributed with mean 56 and standard deviation 6. Find the number of students scoring 47 or less marks and also find the number of students scoring 65 or more marks.
Given that: Area under standard normal curve from $t = 0$ to $t = 1.5$ is 0.4332

7. For the data given below, find f(4)

x	0	2	3	5	6
f(x)	5	7	8	10	12

8. The items produced by a certain machine include only one defective in every 400 items. If the items are packed in boxes of 100, what is the probability that any given box of items will contain i) less than two defectives ii) more than two defectives.
(Given: $e^{-0.25} = 0.7788$)

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