

Enrollment No: \_\_\_\_\_

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B. Tech Mid Semester Exam**

Semester: 4  
Subject Code: (303144259)  
Subject Name: (Biostatistics)

Date: (01/02/2024)  
Time: 10:30 To 12:00 PM  
Total Marks: 40

Sr.No.

Marks

**Q.1 (A) Five One-line Questions**

05

- (1) Define statistics.
- (2) What is linear correlation.
- (3) Write formula of regression line x on y.
- (4) Find probability of getting at least one head in two throws of Unbiased die.
- (5) What is positive correlation.

**(B) Five Fill in the blanks**

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- (1) Coefficient of correlation is lies between \_\_\_ to \_\_\_.
- (2) The statistical tool, \_\_\_\_\_ is used to predict or estimate the unknown value of one variable from known value of another variable.
- (3)  $P(A) + P(A') = \underline{\hspace{2cm}}$ .
- (4) For perfectly positive correlation,  $r = \underline{\hspace{2cm}}$ .
- (5) In A and B are two events then  $P(A \cap B) = \underline{\hspace{2cm}}$ .

**Q.2 Attempt any four (Short Questions)**

12

- (1) Find regression coefficient y on x for the following data:

x	4	2	3	4	2
Y	2	3	2	4	4

- (2) The Probability that a contractor will get a contract is  $\frac{2}{3}$  and the probability that he will get on another contract is  $\frac{5}{9}$ . If the probability of getting at least one contract is  $\frac{4}{5}$ , what is the probability that he will get both the contracts?

- (3) A card is drawn from a pack of well- shuffled cards. Find the probability of the following events.

- (i) The card drawn is a spade.
- (ii) The card drawn is a king.
- (iii) The card drawn is a face card.

- (4) Construct frequency polygon for the following data:

Class	10-20	20-30	30-40	40-50	50-60	60-70	70-80
f	2	8	18	13	7	1	1

- (5) Write advantages of graphical data.

Q.3 Attempt any two questions

08

(1) Construct pie chart for the following data:

A	B	C	D	E
4	5	6	1	4

(2) A coin is tossed 10 times. What is the probability of getting exactly 6 heads?

(3) Find rank correlation for the following data:

x	23	40	41	40	41	23	23	20
y	101	101	99	98	99	99	97	97

Q.4 (A) If 3% of electric units are manufactured by a company are defective. Find the probability that in a sample of 200 units, less than 2 bulbs are defective.

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(B) Find Karl Pearsons correlation coefficient of the following data:

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x	3	6	9	12	15	18
Y	12	24	30	35	38	42

OR

(B) For 1000 students in a college, the following data relating to height (x) and weight(y) are given:

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$$\bar{x} = 168\text{cm}, \bar{y} = 68\text{kg}, \sigma_x = 6.5\text{cm}, \sigma_y = 9.1\text{kg}, r = 0.7$$

Find height of a student when weight is 80 kg