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SEAT No. :

PA-1834

[Total No. of Pages : 4

[5952]-511

T.Y. B.Com. (Semester - V)

STATISTICS

355 (F) : Business Statistics - II

(2019 Pattern) (CBCS)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates :

- 1) All questions are compulsory.
- 2) Figures to the right indicate full marks.
- 3) Use of statistical tables & calculator is allowed.

Q1) Attempt the following :

A) Choose the correct alternative of the following (any five) : [5 × 1 = 5]

- i) The number of ways in which 5 women & 3 men are to be seated at a round table so that no two men are to sit together is :
 - a) 1460 ways
 - b) 1440 ways
 - c) 1420 ways
 - d) 1410 ways
- ii) Let $X \sim \text{Binomial}(n, p)$ then mean of X is
 - a) n
 - b) np
 - c) npq
 - d) pq
- iii) Economic Order Quantity is the tool for controlling _____.
 - a) Inventory
 - b) Labor
 - c) Expenses
 - d) None
- iv) In how many ways 2 students can be chosen from the class of 20 students?
 - a) 190
 - b) 180
 - c) 240
 - d) 390

P.T.O.

b) The probability of defective bolt is 0.1 let x denotes the number of defective bolts in a box of 20 bolts. Find the probability that the defective bolts will be [4]

- i) at least two
- ii) at most three

B) a) Explain : [4]

- i) Event
- ii) Complementary Event
- iii) Independence of two discrete random variables
- iv) Conditional probability of event A for given event B.

b) If A & B are any two events with $P(A/B) = 0.8$ & $P(B) = 0.5$. Find $P(A \cap B)$. [3]

Q4) A) a) A dealer supplies the following information with respect to a product. [4]

Annual Demand - 1000

Ordering Cost - 10 Rs. per order

Price per unit - 20 Rs.

Inventory carrying cost - 20%

Back-order cost - 25%

Determine :

- i) EOQ
- ii) Optimal number of orders

b) For the following bivariate probability distribution of X & Y : [4]

X \ Y	1	2	3	4	5	6
0	0	0	1/32	2/32	2/32	3/32
1	1/16	1/16	1/8	1/8	1/8	1/8
2	1/32	1/32	1/64	1/64	0	2/64

Find :

i) $P(X \leq 1, Y = 2)$

ii) $P(X \leq 1)$

iii) $P(Y = 3)$

iv) $P(Y \leq 3)$

B) a) A bag contain 10 balls, two of which are red, three blue & five black, three balls are drawn at random from the bag. What is the probability that : [4]

i) The three balls are different colours.

ii) Exactly two balls of the same colours.

b) If poisson distribution probabilities are $p(x = 1) = 2 p(x = 2)$. Find mean & variance. [3]

