34331

Reg. No. | | | | | | | | |

III Semester B.Com. (Hons) Degree Examination, March - 2021

COMMERCE

Statistical Applications in Business Decissions - II

(CBCS - New Freshers)

Paper : 3.2

Time : 3 Hours **Maximum Marks : 70**

Instructions to Candidates:

Answers should be written in English only.

PART - A

1. Answer any **five** questions. Each question carries **2** marks. **(5×2=10)**

   a) What do you mean by partial correlation?

   b) Mention the components of time series.

   c) What do you mean by mutually exclusive events? Give an example.

   d) Give the probability mass function of poisson distribution.

   e) What is the probability that an even number appears in a single toss of a die?

   f) Define population.

   g) Mention any two merits of stratified Random Sampling.

PART - B

Answer any **THREE** questions. Each question carries **5** marks. **(3×5=15)**

2. From the following data, calculate coeffecient of rank correlation.

X :	60	56	25	90	35	14	52	27	54	72
Y :	42	34	56	35	40	50	45	60	58	36

3. Calculate three yearly moving averages for the following data and comment on the results.

Year :	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Production (tonnes):	242	250	252	249	253	255	251	257	260	265	262

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4. Between 2 P.M & 4 P.M, the averge number of phone calls per minute coming into the switch board of a compnay is 2.35. Find the probability that during one particular minute there will be at most 2 phone calls.

[Given $e^{-2.35} = 0.095374$]

5. If the population standard deviation is 150, what should be the sample size to estimate the population mean with allowable error 10 with 90% confidence level [Value of Z at 90% confidence level = 1.64].

PART - C

Answer any **Three** questions. Each question carries **15** marks. **(3×15=45)**

6. From the data given below, find

i. The two regression equations.

ii. The coefficient of correlation.

iii. Estimate the value of Y when X = 30.

X :	25	28	35	32	31	36	29	38	34	32
Y :	43	46	49	41	36	32	31	30	33	39

7. Using the method of least squares, fit a straight line trend to the following data and estimate the production for the year 2022. Also plot the actual and trend values on the graph.

Year :	2014	2015	2016	2017	2018	2019	2020
Production ('000 units)	60	72	75	65	80	85	95

8. Fit a binomial distribution for the following data. Also find mean and variance for the fitted distribution

x :	0	1	2	3	4	5	6
f :	5	18	28	12	7	6	4

9. In a bolt factory, machines A, B & C manufacture respectively 20%, 30% and 50% of the total of its output. of them 5, 4 & 2 percent respectively are defective bolts. A bolt is drawn at random from the product and is drawn at random from the product and is found to be defective. What is the probability that it was manufactured by

i. Machine A

ii. Machine B

iii. Machine C.