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DCBD202

Reg. No.

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II Semester B.Com. (BDA) Degree Examination, July/August - 2024

COMMERCE

Business Statistics - II

(NEP CBCS Scheme)

Paper : 2.2

Time : 2½ Hours

Maximum Marks :60

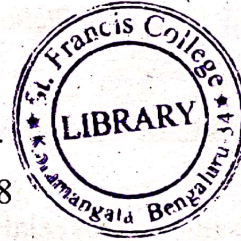
*Instructions to Candidates:*

Answers should be written in English only.

## SECTION - A

Answer any FIVE of the following sub-questions . Each sub-question carries 2 marks. (5×2=10)

1. a) Give the meaning of Regression.
- b) Mention any Four uses of time series analysis.
- c) Find  $b_{xy}$  and  $b_{yx}$  when  $\sigma_x = 6$ ,  $\sigma_y = 3$  and  $r = 0.8$
- d) State the significance of Anova
- e) Mention any two properties of Normal Distribution
- f) What is Null hypothesis?
- g) State any two applications of t-test.



## SECTION - B

Answer any FOUR of the following questions. Each question carries 5 marks.

(4×5=20)

2. Following are the marks of students in the statistics and English in annual examination

	Statistics	English
Mean	40	50
S.D	10	16
r	+0.5	

[P.T.O.]





- a) Find two regression equation.
  - b) Estimate the marks in English when marks in statistics is 50.
  - c) Estimate the marks in statistics when marks in English is 30.
3. Calculate 5 yearly and 7 yearly moving averages from the following data regarding the number of industries in loss in India.

Years	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
No. of Industries	25	28	30	34	22	14	14	12	11	15	13	16	14	11

4. Weight of 1,000 students are normally distributed with mean 67.8 kgs and standard deviation 5 kgs. Find the number of students with weight greater than 60 kgs. (Area under the standard normal curve from 0 to 1.56 is 0.4394)
5. From the past experiences it is known that the mean and standard deviation of height of girls are 5 feet and 3 feet respectively. Find the standard error of height of 40 randomly selected students from the population.
6. Explain in detail Type - I & Type - II error.

### SECTION - C

Answer any TWO of the following questions. Each question carries 12 marks.

(2×12=24)

7. From the following figures relating to advertising expenditure (x) and sales (y).
  - a) Calculate two regression equation.
  - b) Find sales for advertising expenditure of Rs 85 lakhs.
  - c) Advertising expenditure for sales of Rs. 250 lakhs.

X in (Lakhs)	60	62	65	70	73	75	71
Y in (Lakhs)	100	110	130	150	160	190	140

8. Fit a straight line trend and estimate the production of steel for the year 2022 and plot the trend values and actual value on graph sheet.

YEARS	Production
2014	48
2015	50
2016	58



2017	52
2018	45
2019	41
2020	49

9. A normal curve has  $\mu = 20$  cms and  $\sigma = 10$  cms. Find the area under the curve for
- $X < 10$
  - $X > 15$
  - Between 10 and 15.

[Note:- Area from 0 to 1 = 0.3413  
Area from 0 to 0.5 = 0.1915]

#### SECTION - D

Answer any ONE of the following question, which carries 6 marks.

(1×6=6)

- Using imaginary figures analyse the results of simple linear regression.
  - Explain in detail the applications of Anova.
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