QP CODE: D1BCM2404

Name: .....
Reg.No.: .....

FIRST SEMESTER FYUGP EXAMINATION NOVEMBER 2024

MINOR

COM1MN109 ESSENTIAL STATISTICS FOR BUSINESS ANALYTICS

Time : 2 Hrs **Maximum Marks : 70**

BL : Bloom's Taxonomy Level (1 to 6) CO : Course Outcome

Section A

Ceiling Marks : 24

Answer all questions. Each carries 3 marks.

No.	Question	M	BL	CO
1.	Define Sampling distribution	3	2	CO1
2.	Distinguish between Probability sampling and Non-Probability sampling	3	3	CO2
3.	Define Simple random sampling	3	2	CO1
4.	What is the purpose of ANOVA?	3	3	CO2
5.	Define Karl Pearson's coefficient correlation	3	2	CO1
6.	How do you interpret the correlation coefficient	3	3	CO2
7.	Define Regression	3	2	CO1
8.	State some of the important properties of regression coefficients	3	3	CO2
9.	What is meant by business forecasting	3	2	CO1
10.	List any 3 demerits of the least square method	3	2	CO1

Section B

Ceiling Marks : 36

Answer all questions. Each question carries 6 marks.

No.	Question	M	BL	CO
11.	What do you understand by probability sampling? Describe stratified and cluster sampling designs	6	2	CO1
12.	Explain the concept of Type I and Type II errors and their utility in testing hypothesis	6	2	CO2
13.	Compare One-Way ANOVA and Two-Way ANOVA.	6	2	CO2
14.	A teacher wants to investigate the relationship between the number of hours students studied and their scores on a recent math test. The data collected from 6 students is as follows **Student** **Hours Studied** **Test Score** 1 2 65 2 3 70 3 1 50 4 4 85 5 5 90 6 3 75 Rank the values for "Hours Studied" and "Test Score". Calculate the Spearman's rank correlation coefficient (ρ) for the data. Interpret the result.	6	3	CO2 CO3
15.	Distinguish between Correlation and Regression	6	4	CO2

16. A retail store has recorded its monthly sales (in thousands of dollars) for the year's first six months. The sales data is as follows: Plot the sales data on a graph. Use the free-hand curve method to draw. Interpret the trend you observe. | 6 | 3 | CO2 CO3

Month	Jan	Feb	Mar	Apr	May	June
Sales '000s	30	25	40	50	60	55

17. Illustrate with examples 1) Secular trend 2) Seasonal variation 3) Irregular variation 4) cyclical variation | 6 | 4 | CO2

18. Using the three-year moving average, determine the trend, Plot the original and trend values on the Graph. | 6 | 3 | CO2 CO3

Year	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
sales	1230	1060	1240	1300	1450	1160	1430	1320	1260	1120

Section C

Answer any 1 question. Each carries 10 marks. (1x10=10 marks)

No.	Question	M	BL	CO
19.	"Probability sampling is more significant in sampling" Explain	10	3	CO3
20.	A local bakery wants to compare the sales of three different types of cookies over a week. The bakery sells: The sales (in dozens) for each type of cookie over five days are recorded as follows:	10	3	CO2 CO3

Chocolate Chip	**Oatmeal Raisin**	**Peanut Butter**
10	8	9
12	7	11
14	9	10
13	6	12
11	8	10

Conduct a one-way ANOVA to determine if there are any significant differences in the mean sales among the three types of cookies. Use a significance level of 0.05. (value of F (2,12) = 19.41)

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