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

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - NOVEMBER 2024.
(For those admitted in June 2023 and later)

PROGRAMME AND BRANCH: B.B.A.

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
III	PART - III	ELECTIVE GENRIC - 3	U23BB3A3	BUSINESS STATISTICS

Date & Session: 14.11.2024 / AN **Time : 3 hours** **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	**SECTION – A (10 X 1 = 10 Marks)** **Answer ALL Questions.**
CO1	K1	1.	The arithmetic mean of observations 14,13,32,41 and 55 is: a) 23 b) 25 c) 31 d) 32
CO1	K2	2.	Which one of the following is a positional average? a) Arithmetic mean b) Median c) Geometric mean d) Harmonic mean
CO2	K1	3.	Squares of_____is known as variance a) Standard Deviation b) Mean c) Mean Deviation d) Median
CO2	K2	4.	A measure of dispersion is an average of a) Variance b) Skewness c) Median d) Deviation
CO3	K1	5.	What is the primary purpose of detrending in time series analysis? a) To remove noise from the data b) To eliminate the seasonal component c) To identify outliers d) To isolate the trend component
CO3	K2	6.	Which method estimates the seasonal component using simple averages? a) Simple Average Method b) Ratio to Trend Method c) Semi-Averages Method d) Link Relative Method
CO4	K1	7.	The best average in the construction of Index Numbers is a) Median b) Geometric Mean c) Mode d) Arithmetic Mean
CO4	K2	8.	Paasche Index number is based on a) Base year quantities b) Current Year quantities c) average of Base & Current year quantities d) none of the above
CO5	K1	9.	The null and alternative hypotheses are. a) H0 : $\mu \geq 8.2$ & H1 : $\mu < 8.2$ b) H0 : $\mu = 8.2$ & H1 : $\mu \neq 8.2$ c) H0 : $\mu \leq 8.2$ & H1 : $\mu > 8.2$ d) H0 : $X \neq 8.2$ & H1 : $X = 8.2$

CO5	K2	10.	This hypothesis test is classifies as. a) Right-tailed b) Two-tailed c) Multi-tailed d) left-tailed
Course Outcome	**Bloom's K-level**	**Q. No.**	**SECTION – B (5 X 5 = 25 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	11a.	Find the arithmetic mean of the following distribution: x: 10, 30, 50, 70, 89 f: 7, 8, 10, 15, 10 **(OR)**
CO1	K3	11b.	Calculate the harmonic mean for the following data: x: 1, 3, 5, 7, 9, 11 f: 2, 4, 6, 8, 10, 12
CO2	K3	12a.	Calculate the standard deviation from the observations: 14, 22, 9, 15, 20, 17, 12, and 11. **(OR)**
CO2	K3	12b.	Calculate mean deviation from the following data: X: 2, 4, 6, 8, 10 F: 1, 4, 6, 4, 1
CO3	K4	13a.	Discover the Methods of Measuring Seasonal Variations. **(OR)**
CO3	K4	13b.	A hospital has used a 9 month moving average forecasting method to predict drug and surgical inventory requirements. The actual demand for one item is shown in the table below. Using the previous moving average data, convert to an exponential smoothing forecast for month 33. Month : 24 25 26 27 28 29 30 31 32 Demand (in units) : 78 65 90 71 80 101 84 60 73
CO4	K4	14a.	Dissect the CPI sample created? **(OR)**
CO4	K4	14b.	Construct Consumer Price Index Number with the help of the following data: Food 125 40 Fuel 120 10 Cloth 66.67 25 House Rent 120 15 Miscellaneous 150 10
CO5	K5	15a.	Disprove the 5 steps in hypothesis testing? **(OR)**
CO5	K5	15b.	Popularity of psychology professors: Observed: Anderson 32, Klatsky 25, Kamm 10, Total 67 Expected: Anderson 22.3, Klatsky 22.3, Kamm 22.3, Total 67

Course Outcome	Bloom's K-level	Q. No.	**SECTION – C (5 X 8 = 40 Marks)** **Answer ALL Questions choosing either (a) or (b)**
CO1	K3	16a.	Let's try finding the mean of the following distribution: **Class-Interval** 15-25 | 25-35 | 35-45 | 45-55 | 55-65 | 65-75 | 75-85 **Frequency** 6 | 11 | 7 | 4 | 4 | 2 | 1 **(OR)**
CO1	K3	16b.	Find the harmonic mean of the following distribution of data Dividend yield (%) 2-6 | 6-10 | 10-4 | 14-18 | 18-22 No.of Companies 10 | 12 | 18 | 22 | 28
CO2	K4	17a.	Find out the coefficient of mean deviation in the following series: Age 0-10 | 10-20 | 20-30 | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 Persons 20 | 25 | 32 | 40 | 42 | 35 | 10 | 8 **(OR)**
CO2	K4	17b.	Compute Pearson's coefficient of correlation between advertisement cost and sales as per the data given below: Advertisement Cost in 1000's 39 | 65 | 62 | 90 | 82 | 75 | 25 | 98 | 36 | 78 Sales in lakhs 47 | 53 | 58 | 86 | 62 | 68 | 60 | 91 | 51 | 84
CO3	K4	18a.	Calculated the trend values from the following data by the method of semi-averages. Year 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 Sale 10 | 11 | 13 | 8 | 14 | 12 | 9 | 14 Year 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 Sale 13 | 10 | 12 | 16 | 14 | 16 | 17 **(OR)**
CO3	K4	18b.	Compute the seasonal index from t**he** following data by the method of simple averages. Year Quarter Y | Year Quarter Y | Year Quarter Y 1980 I 106 | 19 2 I 90 | 1984 I 80 II 124 | II 112 | II 104 III 104 | III 101 | III 95 IV 90 | IV 85 | IV 83 1981 I 84 | 1983 I 76 | 1985 I 104 II 114 | II 94 | II 112 III 107 | III 91 | III 102 IV 88 | IV 76 | IV 84
CO4	K5	19a.	From the following data find Consumer Price Index: Items | Quantity Consumed in Current Year | Price in Base year | Price in Current Year Rice 30 qt 12 25 Pulses 36 kg 0.4 0.6 Oil 24 l 1.5 2.2 Clothing 72 metres 0.75 10 Housing per month 20 30 Miscellaneous per month 20 15 **(OR)**
CO4	K5	19b.	Calculate the cost of living index number from the following data : Item | Price (Base Year | Current Year) | Weight Food 30 | 47 | 4

Fuel	8	12	1
Clothes	14	18	3
House Rent	22	15	2
Miscellaneous	25	30	1

CO5	K5	20a.	The following data related the rubber percentage of two types of rubber plants, where the sample has been drawn independently. Test for their mean difference. Type I 6.21, 5.70, 6.04, 4.47, 5.22, 4.45, 4.84, 5.84, 5.88, 5.82, 6.09, 5.59, 6.06, 5.59, 6.74, 5.55 Type II 4.28, 7.71, 6.48, 7.71, 7.37, 7.20, 7.06, 6.40, 8.93, 5.91, 5.51, 6.36
			(OR)
CO5	K5	20b.	Two random samples were drawn from two normal populations and their values are: A : 65, 66, 73, 80, 82, 84, 88, 90, 92, B : 64, 66, 74, 78, 82, 85, 87, 92, 93, 95, 97 Test whether the two populations have the same variance at the 5% level of significance. 2 =8.)ν1=10 and ν(Given: F=3.36 at 5% level for