LOYOLA-INTERNATIONAL ACADEMIC COLLABORATION
LOYOLA COLLEGE CHENNAI – 600 034

BBA-FRANCE – END SEMESTER EXAMINATION

THIRD SEMESTER – NOVEMBER 2024

BBAFR 333–ECONOMETRICS & DATA ANALYSIS

Date: 11-11-2024 Dept. No. Max. : Marks 100
Time: 01:00 pm-04:00 pm

PART – A

Answer all the questions: **(10 x 2 = 20 Marks)**

1. Write the command to install pandas.
2. Write the syntax to open a file in Python.
3. What are the outputs you will get when you call **summary(variable_name)** in R?
4. u = c(1,2,3)
   v = c(5,6,7,8,9,10)
   What is the result of u + v in R?
5. The null hypothesis is accepted when p-value is less than the α value. Is it true or false?
6. Give an example for positive correlation and write the EXCEL syntax for correlation.
7. What is the fundamental result of a Least Square Estimator?
8. Write the normal equations for $Y = \beta_1 X + \beta_2$.
9. What is VIF?
10. Write the equation of supply.

PART – B

Answer all the questions: **(5 x 10 = 50 Marks)**

11. a) Explain about the fundamental data types in Python?

(or)

b) Write any ten reserved words used in Python.

12. a) Write the R- code to find the mean, variance and standard deviation of the following distribution.

x	0	1	2	3
P(x)	0.125	0.375	0.375	0.125

(or)

b) If A=matrix(c(1,2,3,4,5,6), nrow=2, ncol=3) the write the output of the following R codes.
(i) cbind(A,c(7,8)) (ii) rbind(A,c(7,8,9)) (iii) Find A^{-1}. (iv) inv(A) %*% A
(v) A[-c(1,-c(1)]

13. a) Write the steps involved in t – test. Also write the procedure for t-test in Excel.

(or)

b) Explain the syntax of Poisson distribution and Normal distribution in Excel.

14. a) Estimate the demand curve from the following data.

Price	5	6	7	8	9	11
Sales	12	17	19	24	30	29

(or)

b) The Least Square Estimators are the best Estimators. Prove this using an example.

15. a) Explain the two methods for detecting autocorrelation.

(or)

b) Explain about time series analysis.

PART – C

Answer any TWO questions: **(2 x 15 = 30 Marks)**

16. Three related variates X_1, X_2, X_3 take the following sets of values

X_1	1	2	3	4	5
X_2	2	1	5	4	3
X_3	3	1	4	5	2

Find the regression plan of X_1 on X_2 and X_3.

17. Below are given the figures of production (in thousand quintals) of a sugar factory.

Year	1993	1995	1996	1997	1998	1999	2002
Production (thousand quintals)	77	88	94	85	91	98	90

(i) Fit a straight line by the least squares method and tabulate the trend values.

(ii) What is the monthly increase in the production of sugar?

18. Fit a second degree parabola to the following data.

X	0.5	1.0	1.5	2.0	2.5	3.0
Y	72	110	158	214	290	380

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