PRESIDENCY UNIVERSITY
BENGALURU

SCHOOL OF COMMERCE
MID TERM EXAMINATION - OCT 2023

Semester : Semester III - 2022
Course Code : BSE1009
Course Name : Sem III - BSE1009 - Basic Econometrics
Program : BSE

Date : 31-OCT-2023
Time : 9:30AM - 11:00AM
Max Marks : 50
Weightage : 25%

Instructions:
(i) Read all questions carefully and answer accordingly.
(ii) Question paper consists of 3 parts.
(iii) Scientific and non-programmable calculator are permitted.
(iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS   (5 X 2 = 10M)

1. Define Multiple regression.

(CO1,CO2) [Knowledge]

2. Outline the objectives of Econometrics.

(CO2,CO1) [Knowledge]

3. The coefficient of determination, r^2 shows.

(CO1) [Knowledge]

4. Define stochastic error term.

(CO1) [Knowledge]

5. Outline the key assumptions of multiple regression.

(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS   (2 X 10 = 20M)

6. Critically examine the Gauss Markov Theorem.

(CO2) [Comprehension]

7. Interpret and discuss the results. Build a regression model based on the result.

(CO2) [Comprehension]

ANSWER THE FOLLOWING QUESTION   **(1 X 20 = 20M)**

8. The data set BWGHT.RAW contains data on births to women in the United States. Two variables of interest are the dependent variable, infant birth weight in ounces (*bwght*), and an explanatory variable, the average number of cigarettes the mother smoked per day during
pregnancy (*cigs*). The following simple regression was estimated using data on *n* = 1,388 births:

$$\widehat{bwght)} = 119.77 - 0.514 \; cigs$$

(i) What is the predicted birth weight when *cigs*= 0? What about when *cigs* = 20 (one pack per day)? Comment on the difference.
(ii) Does this simple regression necessarily capture a causal relationship between the child's birth weight and the mother's smoking habits? Explain.
(iii) To predict a birth weight of 125 ounces, what would *cigs* have to be? Comment.
(iv) The proportion of women in the sample who do not smoke while pregnant is about .85. Does this help reconcile your finding from part (iii)?

                                                               (CO2) [Application]