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| **ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU-27****B.A. ECONOMICS - VI SEMESTER****SEMESTER EXAMINATION: APRIL 2022****(Examination conducted in July 2022)****ECA DE 6318 - Basic Econometrics** |
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| **Time- 2 1/2 hrs** |  |  **Max Marks-70** |  |
|  |  |  |  |  |  |  |
| ***This paper contains 2 printed pages and 3 parts*****PART A** |



Register Number:

Date: XX/XX/2022

1. **Answer any TEN of the following. 3X10=30**
2. Define econometrics.
3. Differentiate between mathematical and econometric models?
4. Mention any three properties of a good estimator.
5. What are Linear in Variables (LIV) and Linear in Parameters (LIP) functions?
6. State any three properties of the Normal distribution.
7. Distinguish between Type I and Type II errors.
8. The following regression results give the information on determinants of consumption for the United States for the years 1980-1985.

 $\hat{Yi}$= -31116+1.0951 PDPI

$se$ = (0.0266)

$ $ R2= 0.992

 where,

 Y = Per capita consumption expenditure

 PDPI = Per capita Disposable Personal Income

1. Interpret the regression results.
2. Do the results make economic sense?
3. What is your interpretation for R2?
4. What is PARK test?
5. State any three reasons for autocorrelation?
6. What is Heteroscedasticity? Mention its causes.
7. Find out expected value, variance and the standard deviation for the following table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  x | 0 | 1 | 2 | 3 | 4 | 5 |
| f(x) | 0.18 | 0.39 | 0.24 | 0.14 | 0.04 | 0.01 |

1. What is D-W test?

**PART B**

1. **Answer any TWO of the following. 2x5=10**
2. Briefly explain the methodology of Econometrics.
3. Explain the assumption of Classical Linear Regression Model (CLRM).
4. In an anti-malarial campaign in a certain area, Quinine was administered to 812 persons out of a total population of 3,248. The number of fever cases is shown below

|  |  |  |
| --- | --- | --- |
|  Treatment | Fever | No Fever |
| Quinine | 20 | 792 |
| No Quinine | 220 | 2216 |

 Check whether the Quinine was effective or not by applying Chi square test.

 (Given d.f=1, Critical Chi square for 0.05 is 3.84)

**PART C**

1. **Answer any TWO of the following 2X15=30**
2. Following data gives the observation on Investment and Rate of Interest of 10 companies in Karnataka.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $Y\_{i}$(Investment in Crores) | 10 | 9 | 8 | 7 | 6 | 4 | 3 | 2 | 1 | 0 |
|  $X\_{i}$(Rate of interest) | 5 | 6 | 10 | 15 | 20 | 25 | 30 | 39 | 40 | 100 |

1. Build a two variable regression model of the form

$Y\_{i}$=$β\_{1}$+$β\_{2}X\_{2i}$+$u\_{i}$

1. Compute the standard errors of $\hat{β}$1 and $\hat{β}$2
2. Interpret the results.
3. Estimate R Square.
4. Discuss hypothesis testing procedure with an example.
5. What is multicollinearity? What are its consequences? How is it detected? Suggest the remedial measures.