Ex/M. Phil.ECO/1.13/2022(S)

Jadavpur University
Department of Economics

M.Phil. Course Work in Economics Supplementary Examination, 2022

1st Year, 1st Semester

Paper: Research Methodology in Empirical Economics

Time - Two Hours **Full Marks: 30**

Answer question number 1 and any two from the rest

1. Answer any four 2.5 x 4=10

(a) Define Multi-Stage Simple Random Sampling Method. Under what circumstances this technique is to be used?

(b) Distinguish between Cluster Sampling and Stratified Sampling.

(c) Show that Gini-Coefficient is distribution insensitive.

(d) Establish the relationship between Atkinson Index and Entropy Index.

(e) How do you find marginal effect from the estimated logistic regression model?

(f) How do you estimate the severity of poverty from FGT Index?

2. Consider the following zero order correlation matrix:

	V_1	V_2	V_3	V_4
V_1	1	0.98	0.85	0.78
V_2		1	0.89	0.86
V_3			1	0.75
V_4				1

Following Kline's rule, find the Eigenvalue, Eigen Vector, Factor Loadings of first Principal Component (PC). What is the statistical meaning of Eigenvalue and Factor Loadings? How are these related? (6+4)

3. Consider the following table representing the data of five States on 4 socio-economic variables:

States	V_1	V_2	V_3	V_4
1	6	8	5	4
2	10	11	5	7
3	3	4	5	4
4	5	4	3	2
5	5	6	4	7

Find the Distance Matrix between the States from the observed values of five variables. Explore the clusters of the States using single linkage method. Draw the corresponding Dendrogram. (4+4+2)

4. (a) What are the desirable properties of an ideal index? Show that CES type function also exhibits arithmetic, geometric and harmonic means for different parametric values of coefficients. (4+6)

5. Write short notes on (any two): (5+5)

(a) Cointegration and Error Correction Mechanism, (b) Exponential Smoothing of Time Series Data, (c) K-Means Cluster and (d) Path Analysis