**Exam. Code : 103206**
**Subject Code : 1200**

**B.A./B.Sc. 6th Semester**

**QUANTITATIVE TECHNIQUES–VI**

Time Allowed—2 Hours] [Maximum Marks—100

**Note :—** There are **EIGHT** questions of equal marks. Candidates are required to attempt any **FOUR** questions.

I. Discuss the nature, scope and limitation of Econometrics.

II. What is Simple Linear Regression Model ? From the data given below, estimate two variable Regression Model by OLS method.

| | | | | | | |
|---|---|---|---|---|---|---|
| X : | 4 | 6 | 10 | 12 | 16 | 18 |
| Y : | 6 | 8 | 4 | 6 | 8 | 10 |

III. State and prove the Gauss Markov Theorem.

IV. Differentiate between $R^2$ and Adjusted $R^2$. Use the following data :

| | | | | | |
|---|---|---|---|---|---|
| Investment | 65 | 57 | 57 | 54 | 66 |
| Change in Output | 26 | 13 | 16 | –7 | 27 |

Estimate the $Y = \alpha + \beta X$ regression line. Estimate $R^2$ and Adjusted $R^2$, also test the hypothesis that $\beta = 0$ against the alternative hypothesis $\beta$ 0 at 5% level of significance.



V. What is the problem of Multicollinearity in regression analysis ? What are its tests and remedial measures ?

VI. What are the sources, consequences and tests of Heteroscedasticity problem in regression analysis ?

VII. What is Koyck's Transformation ? Discuss the problems of estimation of Koyck's Distributed Lag Model.

VIII. Explain sources, tests and remedial measures for Auto-Correlation Problem.