

MA ECONOMICS
SECOND SEMESTER [REPEAT]
BASIC ECONOMETRICS
MEC - 204

**SET
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

(Objective)

Marks: 20

Choose the correct answer from the following:

1 × 20 = 20

1. The r^2 measures the percentage of total variation in
 - a. X explained by Y
 - b. Y explained by betas
 - c. Y explained by u_i
 - d. Y explained by the regression model
2. The sources of autocorrelation among the following
 - a. Omitted explanatory variables
 - b. Interpolation in the statistical observation
 - c. Mis-specification of the true random term
 - d. All of the above
3. Coefficient of determination R^2 shows
 - a. Goodness of fit
 - b. Absolute data
 - c. Variance
 - d. Coefficient
4. Multicollinearity is limited to
 - a. Cross section data
 - b. Time series data
 - c. Pooled data
 - d. All of the above
5. Durbin-Watson test is used to detect
 - a. Regression
 - b. Autocorrelation
 - c. Heteroscedasticity
 - d. Multicollinearity
6. Unit root test is used to test
 - a. Non-stationarity
 - b. Stationarity
 - c. Multicollinearity
 - d. None of the above
7. The neglect of the presence of heteroscedasticity in a regression model makes the estimators
 - a. Biased
 - b. Inconsistent
 - c. Inefficient
 - d. None of the above
8. The least square estimators are indeterminate when there is problem of
 - a. Autocorrelation
 - b. Multicollinearity
 - c. Heteroscedasticity
 - d. None
9. The lagged values of the endogenous variables creates difficulty to test the presence of
 - a. Spurious regression
 - b. Autocorrelation
 - c. Heteroscedasticity
 - d. Multicollinearity

10. If the Durbin Watson d statistic is found to be equal to 0, this means the first order Autocorrelation is
- | | |
|-----------------------|-----------------------|
| a. Perfectly positive | b. Perfectly negative |
| c. Zero | d. Negative |
11. $R^2 > d$ signifies the presence of
- | | |
|------------------------|----------------------|
| a. Autocorrelation | b. Multicollinearity |
| c. Spurious regression | d. All |
12. Which conditions should be examined for the identification of a model?
- | | |
|----------|---------|
| a. Order | b. Rank |
| c. Both | d. None |
13. The trend of a time series is completely predictable if it is
- | | |
|------------------|---------------|
| a. Deterministic | b. Stochastic |
| c. Unit root | d. Stationary |
14. The relationship between the independent variable and error variable leads to
- | | |
|---------------------|------------------------|
| a. Estimation error | b. Specification error |
| c. Regression error | d. Simultaneity bias |
15. The condition for the uniqueness of the structural parameters is that the structural model should be
- | | |
|-----------------------|--------------------|
| a. Exactly identified | b. Over identified |
| c. Under identified | d. Indeterminate |
16. The total number of equations in the order condition is represented by
- | | |
|------|---------|
| a. K | b. M |
| c. G | d. None |
17. The first time difference of the series $Y_t = Y_{t-1} + U$ is
- | | |
|---------------|-------------------|
| a. Stationary | b. Non stationary |
| c. Unit root | d. Deterministic |
18. A random variable Y is denoted as Y_1 if it is
- | | |
|---------------|-------------|
| a. Continuous | b. Discrete |
| c. Grouped | d. All |
19. The simultaneity bias is more likely to be eliminated when the sample size is
- | | |
|----------|-----------------|
| a. Small | b. Sufficient |
| c. Large | d. Inconclusive |
20. Which of the following cannot be a predetermined variable?
- | | |
|---------------------|----------------------|
| a. Exogenous | b. Endogenous |
| c. Lagged exogenous | d. Lagged endogenous |

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(Descriptive)

Time : 2 Hr. 30 Mins.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. a) Define hypothesis. 2+3+5=10
b) Describe the types of hypothesis and BLUE.
2. Estimate the OLS estimators. Explain the standard assumptions of OLS. 6+4=10
3. What is Time series analysis? Explain Random walk model with drift and without drift. 10
4. Estimate the Three variables or Multiple variable regression model. 10
5. a) Discuss how the presence of unit root in a series makes it non-stationary. 6+4=10
b) Give an example of spurious regression.
6. a) Examine the identification state of the following model: 7+3=10
$$C_t = a_0 + a_1 Y_t + U_1$$
$$I_t = b_0 + b_1 Y_{t-1} + b_2 r_t + U_2$$
$$Y_t = C_t + I_t + G_t$$

b) How can a random walk model without drift be converted into a stationary one?
7. Consider the following demand and supply model for money: 3+7=10
$$M_d = a_1 + a_2 Y_t + a_3 R_t + a_4 P_t + U_{1t}$$
$$M_s = b_1 + b_2 Y_t + U_{2t}$$

Where M = money, Y = income, R = interest rate, P = price
a) Explain the different variables of the model.
b) Discuss the state of identification of the given model.
8. a) Discuss the order condition for the identification of a model with a suitable example. 8+2=10
b) When do we go for the rank condition in a model?

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