(PART-B : Descriptive)

Time: 2 hrs. 40 min.   Marks : 50

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

1. Explain briefly the meaning, nature and scope of Econometrics?   10

2. Given the data for two variables X and Y   5+5=10

    X: 5 13 15 4 5 6 5
    Y: 8 10 13 3 2 8 4

    By using OLS method:
    a. Estimate the regression line X on Y
    b. Estimate the regression line Y on X

3. a. Explain briefly the terms stationary and Non stationary?   4+6 =10
    b. Discuss the standard assumptions of a regression model?

4. a. Explain the consequences and remedial measures of Multicollinearity   6+4 =10
    b. Discuss briefly the term simultaneous bias?

5. Two variables gave the following data   5+5=10
    $\bar{X}$ =20, δ_X = 4,   r = 0.7

    $\bar{Y}$ = 15, δ_X = 3,

    a. Obtain Regression two regression lines
    b. Find the value of x when y= 20 and value of y when x=24

6. Consider the following demand and supply model of a product: 6+4 =10
    $$Q_t^D = \alpha_0 + \alpha_1 P_1 + \alpha_2 X_1 + \mu_1$$
    $$Q_i^S = \gamma_0 + \gamma_1 P_1 + \mu_2$$

    a. Obtain the equilibrium price and equilibrium quantity
    b. Find the identification level of the structural equations

7. a. What is the meaning of Unit Root?   5+5=10
    b. What do you mean by Co-Integration?

8. a. Explain the following concepts   3+3+4
     (i) Heteroskedasticity (ii) Multicollinearity   =10
    b. From a regression model run upon certain variables Y_{t-1} and X_2,
    following results has been obtained?
    $$Y = 0.81 - 0.554 Y_{t-1} + 0.331 X_2$$

    SE (0.32) (0.043)   (0.032)

    Using 5% level of significance the critical value is 1.64 over the time
    period of 120 years. Check whether the model has Autocorrelation
    problem or not by using Durbins- h test statistic?

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[4]

MA ECONOMICS
SECOND SEMESTER
BASIC ECONOMETRICS
MEC - 205
(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.   Full Marks : 70

(PART-A : Objective)

Time : 20 min.   Marks : 20

Choose the correct answer from the following: $1\times20=20$

1. Data collected over a period of time is called as
    a. Time Series data   b. Cross-Section data
    c. Panel data   d. None of these

2. Violation of assumption Variance $(\mu_i)=\delta^2$ leads to

    a. Autocorrelation   b. Multicollinearity
    c. Heteroskedascticity   d. None of the these

3. Simple regression analysis is Causal Relationship between
    a. One variable   b. Two variable
    c. Three variable   d. More than two Variables

4. In a regression model $Y_I = \beta_1 + \beta_2 X_I + \mu_I$, μ_I can take values that are
    a. Only Positive   b. only Negative
    c. Only Zero   d. Positive, Negative or Zero

5. In classical linear regression model, $Cov(\mu_i, \mu_j)$ =0, i=j refers to the assumption of

    a. Zero mean value of the disturbance   b. Homoskedasticity
       term
    c. No Autocorrelation   d. Both b&c

6. What is BLUE
    a. Best least Square Unbiased Estimator   b. Best Linear Unbiased Estimator
    c. Best line Unbiased Estimator   d. None of the above

7. In a regression model Error term "µ" represents
    a. Coefficient   b. Fixed component
    c. Residual component   d. Intercept

8. The population regression Function is Not directly Observable, This statement is
    a. True   b. False
    c. Sometimes true sometimes false   d. Nonsense statement

[1]   P.T.O.

9. Rejecting a true Hypothesis results in which type of Error
   a. Type I error
   b. Type II Error
   c. Sample error
   d. Non Sample error

10. In confidence interval estimation if a = 5%, this means that the interval includes the True β with probability of
    a. 5%
    b. 50%
    c. 45%
    d. 95%

11. When we reject our Null Hypothesis, then our findings are said to be
    a. 90% probability findings
    b. 5% Confidence findings
    c. Significant
    d. None of these

12. By applying OLS method to simultaneous equations results in the parameters being
    a. Biased
    b. Inefficient
    c. Inconsistent
    d. Biased and inconsistent

13. In contrast to single equation models, in simultaneous equations there must be more than one
    a. Endogenous variable
    b. Exogenous variable
    c. Error terms
    d. Parameters

14. A simultaneous model is said to be Exactly Identified if
    a. Unique numerical values of the structural parameters can be obtained
    b. Structural coefficients cannot be estimated
    c. Unique solution of all the structural coefficients is not possible
    d. None of these

15. For an simultaneous equation Model with k unknowns and k+1 reduced form equation coefficients, the model is said to be
    a. Identified
    b. Over Identified
    c. Just Identified
    d. Unidentified

16. The collection of a variable ordered in a time through a realization process is known as
    a. Stationary series
    b. Stochastic Process
    c. Spurious process
    d. Non Stationary

17. A stochastic process whose mean and variance and covariance are constant over time is called as
    a. Stationary
    b. Non Stationary
    c. Random Walk
    d. None Of these

18. A Non Stationary series that becomes stationary on differencing the series Twice is
    a. Integrated of Order 0
    b. Integrated of Order 1
    c. Integrated of order 2
    d. Integrated of order 3

19. To correct the Autocorrelation problem through Durbin Watson the formula is

    a. $\sum_{t=2}^{T}(e_t - e_{t-2})^2 \Big/ \sum_{t-1}^{T}(e_t)^2$

    b. $\sum_{t=2}^{T}(e_t - e_{t-2}) \Big/ \sum_{t-1}^{T}(e_t)$

    c. $\left(1 - \frac{DW}{2}\right)\sqrt{\frac{T}{1 - T[Var(\beta_1)]}}$

    d. None of these

20. The expression $E(\mu_i,\mu_j) \neq 0$ defines the presence of

    a. Autocorrelation
    b. Multicollinearity
    c. Heteroskedascticity
    d. None of these

Contd...

P.T.O.