UNIVERSITY OF THE PUNJAB
B.S. 4 Years Program / Sixth Semester – 2019

Paper: Econometrics II
Course Code: ECON-307 Part – I (Compulsory)   **Time: 15 Min. Marks: 10**

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Signature of Supdt.:

Q.1. Encircle the correct choice.   **(1x10=10)**

1. Even though the disturbance term in the CLRM is not normally distributed, the OLS estimators are
   a) Still unbiased
   b) Biased but inefficient
   c) Both unbiased and efficient
   d) Both biased and efficient

2. In a regression model that contains the intercept, the sum of the residuals is always
   a) Zero
   b) One
   c) Infinity
   d) Can't be estimated

3. The conditional and unconditional means of a random variable are the same things.
   a) Same thing
   b) Different thing
   c) Not comparable
   d) Comparable

4. Dummy variable trap is associated by
   a) Multicollinearity
   b) Heteroscedasticity
   c) Autocorrelation
   d) None of the above

5. In the regression of Y on X_2 and X_3, suppose there is little variability in the values of X_3. This would increase
   a) $\text{var}(\hat{\beta_3})$
   b) $\text{var}(\hat{\beta_2})$
   c) $\text{var}(\hat{\beta_1})$
   d) None of the above

6. If heteroscedasticity is present, the conventional t and F tests are
   a) Valid
   b) Invalid
   c) Not possible to estimate
   d) All of the above

P.T.O.

7. The R^2 values of two models, one involving regression in the first difference form and another in the level form, are
   a) Not directly comparable
   b) Directly comparable
   c) Not measurable
   d) Measurable and directly comparable

8. When autocorrelation is present, OLS estimators are
   a) Unbiased
   b) Efficient
   c) Consistent
   d) None of the above

9. Autocorrelation is a problem associated with
   a) Time series data only
   b) Cross section data only
   c) Panel data only
   d) Both time series and panel data

10. WHITE test is used to detect
    a) Multicollinearity
    b) Heteroscedasticity
    c) Autocorrelation
    d) Misspecification

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

<u>**Subjective Part**</u>

Q 2. Explain the following terms.   4x5 = 20
  i)   Multiple regression K-variable model
  ii)   Consequences of Autocorrelation
  iii)   ARDL Model
  iv)   Moving Average (2) process
  v)   Unit Root Problem

Q 3. Write in detail about ARCH models. Also discuss ARCH (1) and ARCH (2)
processes.   10

Q 4. On the basis on following data, a researcher estimated the regression line as:

$$\hat{Y} = -25.08 - 0.66X_2 + 6.21X_3$$

Y	11	16	11	14	13	17	14	15	12	18
X₂	20	18	22	21	27	26	25	27	30	28
X₃	8.1	8.4	8.5	8.5	8.8	9.0	8.9	9.4	9.5	9.5

Find the Durbin Watson "d" Statistics and confirm either there is
autocorrelation in the model or not.   10
Note: The critical values of Durbin Watson statistics at 5% level of significance
are   dL = 0.697   dU = 1.641

Q 5. Differentiate between short run and long run model for integration.   10