RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIFTH SEMESTER EXAMINATION, DECEMBER 2016

THIRD YEAR (BATCH 2014-17)

Date : 15/12/2016 **ECONOMICS (Honours)**

Time : 11 am – 3 pm Paper : VI Full Marks : 80

(Use a separate Answer book for each group)

Group – A

Answer **any three** questions from **Question No. 1 to 5** : (3 × 10)

1. Starting with the general linear model $\underset{\sim}{Y}_{n\times 1} = \underset{\sim}{X}_{n\times k}\underset{\sim}{\beta}_{k\times 1} + \underset{\sim}{\in}_{n\times 1}$ (the expressions having their usual meanings), derive the least square estimate of the parameter vector $\underset{\sim}{\beta}$ & the variance-covariance matrix of the estimated parameter vector. Also test the hypothesis $H_0 : C'\underset{\sim}{\beta} = 0$ against $H_1 : C'\underset{\sim}{\beta} \neq 0$, where C is a column vector of 'k' elements. (6 + 4)

2. Suppose you want to estimate the following log-linear Cobb-Douglas production function.

   $\log Q = \alpha + \beta_1 \log L + \beta_2 \log K + u$

   Where Q = output, L = labour input, K = value of capital, and u is the stochastic disturbance term. How would you examine equivalence of elasticities labour and capital in respect of your estimated model? Explain the steps involved and decision rules in the test chosen for this purpose. (2 + 8)

3. Briefly explain the Linear probability model. Explain the major limitations associated with the application of LPM. State & explain a possible solution to overcome such problems. (2 + 4 + 4)

4. i) Explain the concept of incremental intercept and incremental slope in the context of dummy variable in linear regression.

   ii) What leads to "dummy variable trap" i.e why it is necessary to define the number of dummy valuables as one less than the total number of categories of a qualitative variable?

   iii) Why is it inappropriate to examine the 'goodness of fit" of estimated logit model using conventional R^2-statistic? (4 + 3 + 3)

5. What are the causes of multicollinearity? Explain the consequences of the presence of multicollinearity in a linear regression model. What are the various tests to detect multicollinearity? (2 + 3 + 5)

Group – B

Answer **any two** questions from **Question No. 6 to 8** : [2×4]

6. a) What do you mean by fixed exchange rate system and floating exchange rate system? [1]

   b) What is spot exchange rates and forward exchange rates? [1]

   c) What is real exchange rate? [1]

   d) If, domestic price inflation is 15%, foreign price inflation is about 12% and the nominal exchange rate (number of rupees per unit of dollars) depreciates by 2%, the real exchange rate will appreciate or depreciate by how much percentage point? [1]

7. a) What do you mean by *Law of One Price*? What will be the definition of nominal exchange rate in this system? What, then, will be the real exchange rate? [2]

b) What was international gold standard? What was its implication in exchange rate system? [2]

8. The effect of devaluation on trade balance can be presented in terms of a diagram which looks like a letter in the English alphabet. Identify the letter and explain your result. [4]

Answer ***any one*** question from **Question No. 9 & 10** : [1×7]

9. Consider an economy described by the following set of equations:

$$Y = C + I + G + NX$$
$$Y = 5000$$
$$G = 1000$$
$$T = 1000$$
$$C = 250 + 0.75\,(Y - T)$$
$$I = 1000 - 50r$$
$$NX = -500 + 500\varepsilon$$

Where, ε = *nominal exchange rate = number of rupees per unit of dollar*.

a) In this economy solve for national saving, investment, trade balance, and the equilibrium exchange rate. [2]

b) Suppose now G rises to 1250. Solve for national saving, investment, the trade balance, and the equilibrium exchange rate. Explain what you have found. [2]

c) Now suppose world interest rate rises from 5% to 10%. In both the cases when G = 1000 & G = 1250, solve for national saving, investment, the trade balance, and the equilibrium exchange rate. Explain your results in both the situations. [3]

10. a) Explain the 'swan diagram' of internal and external balance. [4]

b) What is Marshall – Learner condition? Why do you think that it is necessary as well as sufficient condition for a devaluation policy to improve trade balance? Mathematically derive the Marshall – Learner condition. [3]

Answer ***any one*** question from **Question No. 11 & 12** :

11. a) Show that the large open economy multiplier is greater than the small open economy multiplier and the small open economy multiplier is greater than the closed economy multiplier with respect to rise in government expenditure. [4]

b) Suppose the economy is described by these following equations:

$$Y = C(Y - t) + I(r) + G + NX(e, Y)$$
$$\frac{M}{P} = L(r, Y)$$
$$BoP \equiv NX(e, Y)$$

Further,

$$C(Y-T) = \bar{C} + c(Y-T)$$
$$I(r) = \bar{I} - bY$$
$$G = \bar{G}$$
$$X = \bar{M} + m^*Y^*$$
$$M = \bar{M} + mY$$

i) Solve for Y & Y^* and find $\frac{dY}{dY^*}$ at the equilibrium income of the home country. Explain intuitively. [4]

ii) What is the effects on trade balance of home country when G increases? [2]

12. a) ***"Floating rates (in the absence of capital flows) restrict the effects of disturbances to the country of origin. Whereas fixed rates partially transmit the effect in the foreign country."***

— Explain the idea first when disturbance originates in domestic economy and then when disturbance originates in foreign country. [4]

b) Suppose an economy is described by the following set of equations:

$$Y = C(Y-T) + l(r) + G + NX(e,Y)$$
$$\frac{M}{P} = L(r,Y)$$
$$BoP \equiv NX(e,Y) + KA(r)$$

Where $KA = KA(r);\ KA'(r) > 0$

i) Assume that it is a small open economy, i.e. $r = r^*$. Explain the effect of fiscal contraction such as an increase in T on the overall economy in a floating exchange rate regime. [3]

ii) Explain the same effect when the country is large and first there is no capital mobility, then a moderate degree of capital mobility and finally high degree of capital mobility in a fixed exchange rate regime. [3]

Answer ***any two*** questions from **Question No. 13 & 15** : [2×4]

13. Explain how the presence of externality in a market can lead to market failure. What can the government do to solve the problem? [2+2]

14. Discuss the difference between conditional and unconditional grants in the provision for a public good. [4]

15. In the Indian federal system, discuss how different types of taxes have been distributed among the centre and the states. [4]

Answer ***any one*** question from **Question No. 16 & 17** : [1×7]

16. How do you justify government intervention in following activities in an otherwise market economy?

(a) Expenditure in education (b) Expenditure in health services. [3½+3½]

17. What do you mean by public good?

Explain how the provisioning of a public good is different from that of a private good using a partial equilibrium approach. [3+4]

Answer ***any one*** question from **Question No. 18 & 19** : [1×10]

18. Do you think that diminishing marginal utility is necessary and/or sufficient for the progressivity of taxation under equal sacrifice principle? [10]

19. Discuss Richardian Equivalence proposition in brief – can you point any of its limitations. [8+2]

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