RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIRST SEMESTER EXAMINATION, DECEMBER 2018
FIRST YEAR (BATCH 2018-21)
ECONOMICS (Honours)

Date : 14/12/2018

Time : 11.00 am – 3.00 pm

Paper : I

Full Marks : 100

[Use a separate Answer Book for **each group**]

Group – A

Answer **any three** questions from the following :　　　　　　　　　　　　　　　　　[3 × 4]

1. a) Should an employer hire another worker, if the new person causes diminishing returns? Give reasons for your answer.

   b) Consider the production function —

   $$Q = 5L + 10K$$

   where Q is the total output, L is the quantity of labour employed, and K is the quantity of capital employed.

   i) What does the isoquant look like graphically?

   ii) Does it violate any law?　　　　　　　　　　　　　　　　　　　　　　　(3+1)

   c) Given the total cost function $c = q^2 + 1$, draw the Marginal cost, Average Variable Cost, Average Fixed Cost and Average Cost curves in a single diagram.

   d) Can two indifference curves be tangent to each other?

   e) i) Please explain whether you can think of some goods for which indifference curves might be concave to the origin.

   ii) Draw a set of indifference curves when both goods are bad.　　　　　　　(2+2)

   f) Use indifference curves between apples and biscuits, and budget lines to illustrate (in separate diagrams):

   i) apple is a normal good up to a certain level of income and inferior for higher levels;

   ii) income effect for biscuits is zero for all levels of income.　　　　　　　(2+2)

Answer **any one** question from the following :　　　　　　　　　　　　　　　　　[1 × 8]

2. a) Calculate the elasticity of substitution for the production function $X = 15L^{\frac{4}{5}}K^{\frac{1}{5}}$. Compare this result with the elasticity of substitution for Cobb-Douglas production function.　　(5+3)

   b) i) Suppose that a budget equation is given by $px + qy = m$. The government decides to impose a lump sum tax of *u*, a quantity tax on good x of *t*, and a quantity subsidy on good y of *s*. What is the formula of the new budget line?

ii) Suppose a consumer is purchasing two commodities x and y. Draw the budget sets of the consumer when

    A) good x is rationed so that no more than quantity *B* can be consumed by the consumer;

    B) the consumer can consume x at a price *p* up to a level of *K*, and then has to pay a tax *t* on all consumption in excess of *K*. (4+4)

3. Answer **any two** questions of the following : [2 × 15]

a) i) A) Explain separately, how the Long Run Average Cost (LAC) curve looks like, corresponding to I) CRS, II) IRS and III) DRS production technologies.

    B) Hence argue in terms of returns to scale, the explanation behind the U-shape of the LAC curve. (2+3+3+2)

ii) Show that for the production function $q = 0.75L^{0.63}K^{0.37}$, the isoquants are downward sloping and convex to the origin. (5)

b) i) The MC of production is found to be $MC = 1000 - 20x + x^2$. The fixed cost of production is Rs 9000. Find the total cost function.

ii) Given the production function $Q = K^{1/2}L^{1/2}$ and P_k = Rs. 4, P_L = Rs. 8, derive the equation of the total cost function (P_k is the price of capital, P_L is the price of labour).

iii) Show that the 'expansion path' corresponding to a homogeneous production technology is a straight line through the origin. (5+6+4)

c) i) Write down the assumptions and/or axioms in a Revealed preference framework.

ii) Is the consumer always in equilibrium when the indifference curves are tangent to the budget line?

iii) Graphically derive a price-consumption curve and plot the corresponding Hicks-compensated and ordinary demand curves. How do these two demand curves compare? (5+3+7)

d) Suppose an individual views apples and oranges as being perfectly substitutable to each other.

i) Draw a set of indifference curves that describes individual preferences for apple and oranges.

ii) Are these indifferences curves convex? Why?

iii) Draw the Engel curve and demand curve for apples. (5+5+2.5+2.5)

Group – B

4. a) Suppose an economy is characterised by the following behavioural equations :

$$C = 160 + 0.6Y_D$$
$$I = 150$$
$$G = 150$$
$$T = 100$$

How much will the equilibrium income change if G decreases from 150 to 110?

b) Consider an economy that produces and consumes breads and automobiles. The data for two years are as follows:

	Year	
	2010	2018
Price of automobile	50000	60000
Price of a loaf of bread	10	20
No of automobiles produced	100	120
No of loaves produced	500000	400000

Using 2010 as the base year, compute the nominal GDP, real GDP and the price deflator.

c) What are the public policies required to reduce frictional unemployment?

d) Find out the aggregate demand curve when the demand for money is infinitely interest-elastic.

e) Under what condition, will the fiscal policy be totally ineffective?

f) How does the presence of borrowing constraint alter the findings of the intertemporal choice model by Fisher?

Answer **any one** question of the following :   [1×8]

5. a) i) What is the difference between a Government expenditure multiplier and a balanced budget multiplier in a Simple Keynesian Model?

ii) Under what conditions, will the value of a balanced budget multiplier not equal to unity?   (3+5)

b) What do you mean by 'cost of capital'? How does the cost of capital influence the business fixed investment decisions?   (4+4)

Answer **any two** questions of the following :   [2×15]

6. a) i) Define Keynesian cross.

Show how the interaction between aggregate demand and aggregate supply curve determines equilibrium income in a Simple Keynesian Model.

How will the situation change if MPC> 1?   (2+5+2)

ii) What do the points off IS & LM imply? (3+3)

b) i) Derive the steady state unemployment rate of an economy with 'f' as the rate of job finding and 's' as the rate of job separation. (5)

ii) Discuss how minimum wage law and collective bargaining of trade unions may lead to involuntary unemployment. (5+5)

c) i) How does the sticky price model explain the positive slope of the aggregate supply curve? (8)

ii) How will the slope of the aggregate supply curve change if –

A) no firms have flexible prices;

B) the desired price does not depend on aggregate output? (3.5+3.5)

d) Explain how the Life Cycle Hypothesis explains the inconsistency related to the short run and long run consumption functions. Will the fiscal policy be equally effective as observed in the IS-LM framework when we adhere to the Life Cycle Hypothesis? (10+5)

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