RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College affiliated to University of Calcutta)

B.A./B.Sc. FIRST SEMESTER EXAMINATION, DECEMBER 2015

FIRST YEAR [BATCH 2015-18]

Date : 14/12/2015 **ECONOMICS [Hons]**

Time : 11 am – 3 pm Paper : I Full Marks : 100

(Use a separate Answer book for each group)

Group – A

Answer **any three** questions:

1. A consumer's utility function is given as $U(x, y) = Min\left[\frac{x}{a}, \frac{y}{b}\right]$

   Draw the indifference map for the consumer in the x-y plane. Comment on the nature of the commodities. (3+3)

2. Budhu has an income endowment (1,2). Draw his inter-temporal budget line if the market interest rate is currently at 7%. How does his budget line shift if interest rate goes up to 9%? If he cannot borrow, how does the budget line change? (6)

3. Suppose a consumer purchases 102 units of brillig, and 98 units of mimsi at the prices 12 and 8 per units respectively. If price of brillig rises to 17 how much compensation has to be given to him so that his purchasing power remains constant? (6)

4. What is 'Snob Appeal'? Infer about the corresponding demand curve. (6)

5. Contrast the concepts of diminishing returns to scale and diminishing marginal productivity. Can a production function with constant returns to scale have diminishing marginal productivities? Explain your answer using a Cobb-Douglas production function. (2½+3½)

6. Find out the 'elasticity of substitution' for the CES production function. (6)

Answer **any four** questions:

7. A telephone company NATCOM offers two pricing rules: (i) Rs. 1 per call, (ii) Rs. 2 per call upto 25 calls and Rs. 0.50 per call for any call beyond 100 calls. Assuming M = 100, and price of the other commodity $p_y = 1$, draw the budget lines under pricing rule (i) and (ii). Explore the possible equilibrium under normal preferences. (2+3+3)

8. a) Dinu is presently consuming at (6,4) in potato and meat space. Meat becomes costlier but potatoes are cheaper but Dinu calculated that the old bundle costs same at these prices. Argue whether he is better-off or worse-off or indifferent now.

   b) Consider the following utility function $U = x_1 + x_2$, M = 100, and $p_2 = 1$. What will be the demand for x_1 when, (i) $p_1 = ½$, (ii) $p_1 = 1$ and $p_1 = 2$. Explain your answer. (4+4)

9. Let 'DBT' (Direct Benefit Transfer) is a cash subsidy policy and 'Food Stamp Program' is a policy for providing subsidy in kind. Compare these two policy options with graphical analysis. (8)

10. Suppose that a firm has a production function $Y = AL^{\alpha}.K^{\beta}$, $A>0$, $0<\alpha, \beta<1$. (3+5)
    What geometric form do you expect the average and marginal cost cost curves of this firms to take? Explain in economic terms.
    Derive the long run average cost and marginal cost curves mathematically to substantiate your results.
11. How does a compensated demand curve differ from an ordinary demand curve?
    Do you think that the ordinary demand curve will have a greater demand elasticity than the compensated demand curve for a normal good? (4+4)
12. Compare and contrast the impact of excise tax and sales tax using graphical analysis. (8)
13. a) Show that the indifference curves for the utility function: $U = In(x) + y$ are vertically parallel.
    b) Which assumptions are violated here? (5+3)

Group – B

Answer **any three** questions :

14. Consider an economy that produces only three types of goods – apples, oranges and bananas. In the base year (a few years ago) the production and price data are as follows: (4)

Goods	Quantity	Price
Apples	3,000 bags	Rs. 2 per bag
Bananas	6,000 bunches	Rs. 3 per bunch
Oranges	8,000 bags	Rs. 4 per bag

    The data for current year are as follows:

Goods	Quantity	Price
Apples	4,000 bags	Rs. 3 per bag
Bananas	14,000 bunches	Rs. 2 per bunch
Oranges	32,000 bags	Rs. 5 per bag

    Find out the value of the GDP deflator.
15. Distinguish between frictional and structural unemployment. (4)
16. It has been observed that money supply is positively related to rate of interest. How does it impact the shape of the LM curve? (4)
17. Explain the concept of borrowing constraint. How does it impact the consumption choice of individuals? (2+2)
18. Define Tobin's q. What is its role in determining investment decision of firms? (2+2)

Answer **any one** question :

19. ABC Computer Company built Rs. 20,00,000 worth of computer components. ABC's costs are labour, Rs. 10,00,000; interest on debt, Rs. 1,00,000 and taxes Rs. 2,00,000. ABC sells its output to XYZ Supercomputers. Using ABC's components XYZ builds four computers at a cost of Rs. 8,00,000 each (Rs. 5,00,000 worth of components; Rs. 2,00,000 in labour costs and Rs. 1,00,000 in taxes per computer). XYZ sells three of its supercomputers for Rs. 10,00,000 each. At year's end it had not sold the fourth.
    Find the GDP of the economy from the three approaches showing that they are all equal. (8)

20. Consider an individual who lives for two periods and has the following utility representation

$$U = \log c_1 + \left(\frac{1}{1+p}\right)\log c_2$$

Where c_1 and c_2 represents the consumption levels for periods 1 and 2 respectively. The lifetime budget constraint for the individual is:

$$C_1 + \frac{C_2}{(1+r)} = Y_1 + \frac{Y_2}{(1+r)}$$

Here r = interest rate and p = rate of time preference.

Find the optimal consumption level for the two periods. Show how an increase in interest rate influences the consumption of the two periods. [8]

Answer **any two** questions : [2×15]

21. In a simple Keynesian model, if C = 100 + 0.8Y, derive the savings functions, where C & Y have their usual meaning. Define balanced budget multiplier. Derive the value of balanced budget multiplier in simple Keynesian model. What will be the value of balanced budget multiplier in this model, if investment is positive related to income? (4+2+4+5)
22. Explain the concept of crowding out in the IS-LM model. When will fiscal policy lead to full crowding out? How can a combination of fiscal and monetary policy solve the problem? (6+5+4)
23. What are the Keynes's conjectures about marginal propensity to consume (MPC) and average propensity to consume (APC)? What discrepancies between long and short term natures of the consumption function had been observed by empirical investigations? How does the life cycle Hypothesis solve the discrepancy? (4+4+7)
24. Distinguish between business fixed investment, inventory investment and residential investment. How does the neo-classical theory explain the business fixed investment decisions? (5+10)

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