RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

B.A./B.Sc. SIXTH SEMESTER EXAMINATION, MAY 2014

THIRD YEAR

Date : 22/05/2014 Time : 11 am - 3 pm

ECONOMICS (Honours) Paper : VII

Full Marks : 100

 (4×5)

(5)

(5)

(5)

(5)

[Use a separate Answer book for each group]

<u>Group – A</u>

- 1. Answer **any four** questions of the following :
 - a) Assume that the rate of investment is described by the function $I(t) = 12t^{\frac{1}{3}}$ and K(o) = 25. Find the time path of capital stock K. (5)
 - b) Discuss the nature of the following time paths :

i)
$$y_t = -3(\frac{1}{4})^t + 2$$
; ii) $y_t = -5(-\frac{1}{10})^t + 3$ (5)

c) What is the nature of risk aversion exhibited by the utility functions

i)
$$U = -e^{-aw}$$
, and ii) $U = aW - bW^2$ (a and b both positive) where W denotes wealth? (2 + 3)

- d) Mr. X intends to invest Rs. 2,500 (his only wealth) in a risky project that might yield Rs. 10,000 if the project succeeds and nothing otherwise. If he is indifferent between two options and his utility function is $u = \sqrt{W}$. Find out the probability that the project fails. (5)
- e) Consider a closed economy with aggregate output y, rate of interest, r, lump sum tax T, government expenditure G, nominal money supply M and price level P. For this economy, the consumption function is C(y-T), the investment function is I(r) & the demand for money function is L(y, r).

Suppose M and G are exogenously given, and the law requires the government to balance its budget. What is the effect of a marginal increase in G on aggregate demand? Explain the expansionary effect such an increment.

- f) The irritation of carrying a shopping bag always reduces my utility by $\frac{1}{2}$ a unit. If I actually go shopping; the shopkeeper refuses to give me a bag. I cannot buy one and the process of getting a bag eventually reduces my utility by 3 units. If however, I carry a bag then shopping reduces my utility by only 1 unit. The probability that I will go shopping is $\frac{1}{2}$. Show that if I maximize my expected utility, I should always carry a bag.
- g) Suppose the demand function of a consumer is $q = 10 2p^{\frac{1}{2}}$. Find the change in consumer surplus remitting from a change in price from p = 1 to p = 4.
- h) In a college there is a monopoly coffee shop whose marginal cost is 5 rupees per 100 ml of coffee. Consumers have a utility function

 $U = \theta u(q) - T$, where θ denotes consumer type, u(q) the utility from consuming q units and T the total tariff paid by him. Consumers are equally likely to be with two types $\theta = 20$ or 15. Find the first best solution.

- 2. Answer any two questions of the following :
 - a) Consider an economy described by the following equation :

$$\begin{split} \mathbf{C}_{t} &= \mathbf{b} \mathbf{Y}_{t-1} & 0 < \mathbf{b} < 1 \\ \mathbf{I}_{t} &= \mathbf{v} (\mathbf{Y}_{t-1} - \mathbf{Y}_{t-2}) & \mathbf{U} > 0 \\ \mathbf{Y}_{t} &= \mathbf{C}_{t} + \mathbf{I}_{t} \end{split}$$

Find the time path of output. What will be the nature of the time path in the following cases :

i)
$$v \le (1 - \sqrt{s})^2$$

ii) $(1 - \sqrt{s})^2 < v < 1$
iii) $v = 1$

$$(11) v = 1$$

iv)
$$1 < v < (1 + \sqrt{s})^2$$

v)
$$v \ge (1+\sqrt{s})^2$$

Where s = (1-b).

b) Consider the following demand and supply functions :

$$Q_{d} = \alpha - \beta P + mP' + nP'' \qquad (\alpha, \beta > 0)$$

$$Q_s = -\gamma + \delta P + uP' + \omega P'' \qquad (\gamma, \delta > 0)$$

If the market always adjusts according to –

$$\frac{\mathrm{d}p}{\mathrm{d}t} = \mathbf{j}(\mathbf{Q}_{\mathrm{d}} - \mathbf{Q}_{\mathrm{s}})$$

find the intertemporal equilibrium price and the time path of price. State the conditions under which the time path will be oscillating.

c) i) There are two friends Mr. A and Mr. B. Each have identically same income y; both are expected utility maximisers and have identical Bernoulli utility functions, u(x) such that u'(x) > 0 for all x and u(0)=0. Both the friends consider holding the following lottery among themselves. In the lottery, each person is to put the same amount of money, say x₀ in a 'pot' and then toss an unbiased coin. If heads (tails) come up, Ms. A (respectively Mr. B) gets all the money in the pot.

In designing the lottery, their objective is to determine the optimal $x^0 \in [0, y]$ to put in the pot, so that sum of their expected utility is maximised. What will be the optimal x^0 if the individuals are : (i) risk-averse ii) risk-lover iii) risk-neutral. (3 + 2 + 3)

ii) Consider the utility function of wealth (W) $U(W) = \theta(\mu + \frac{W}{\gamma})^{1-\gamma}$, where

(a)
$$\gamma \le 1$$
, (b) $\mu + \frac{W}{\gamma} > 0$ and (c) $\theta \left[\frac{(1-\gamma)}{\gamma} \right] > 0$.

Explain the restriction on the parameters in terms of economics. Compute the absolute risk aversion for this function. When does this absolute risk aversion become constant? (2+3+2)d) i) Suppose Y is aggregate real income, r is the real rate of interest. M is the exogeneously given nominal money stocks, P is the aggregate price level and G is the real government expenditure. Consumption demand is $e.Y + \beta(\frac{M}{P})$ and investment demand is $\frac{\alpha}{r}$. The transaction demand for money balances is λY , and the speculative demand for money

(5)

 (2×5)

balances is $\frac{\mu}{r}$. Suppose Y and r are endogeneously determined variables. While $c \in (0,1); \beta > 0, \alpha > 0, \lambda > 0 \& \mu > 0$ are exogeneously given parameters.

Calculate :

- a) The rate of change of aggregate demand with respect to expansionary monetary policy. (4)
- b) The rate of change of aggregate demand with respect to expansionary fiscal policy. (4)

(7)

ii) Suppose a risk averse individual invests X in 100 risky projects each, where X has mean 0 and variance σ^2 . Show that if the returns from the projects are independent, the total risk premium he is willing to pay is less than the risk premium of an investment of 100X is one of the projects.

<u>Group – B</u>

3.	An	swer any three questions of the following :	(3 × 4)
	a)	What are the basic features of "take-off"?	
	b)	Define "dependency" mentioning at least two important features of this concept.	
	c)	What are the major functions of the International Monetary Fund?	
	d)	Mention some basic features of decentralized planning.	
	e)	What is "missing women mystery"?	
	f)	Give some examples of gender discrimination with reference to education.	
4.	W	hat is import-substitution? Discuss some of the uses and limitations of this policy.	(8)
Or,			
Critically evaluate the role of the World Trade Organisation in the context of the developing			
	co	untries.	
5.	An	swer any two questions of the following :	(2×15)
	a)	Discuss the major arguments for planning in developing countries and briefly analyse the	(0, 7)
		reasons for plan failure in these countries.	(8 + 7)
	b)	Do you support the view that underdeveloped countries benefit largely from international trade? Discuss the question in the light of the analysis of the Prebisch-Singer thesis.	(15)
	c)	What are the major arguments in favour of FDI in the context of developing countries?	
		Mention the major limitations of FDI in respect of developing nations.	(8 + 7)
	d)	Describe the transition from Mercantilism to Industrial Capitalism in Western Europe. What	
		were its impact on 3rd World Countries?	(10 + 5)

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