

EX/PG/ECO/51/81/2017

MASTER OF ARTS EXAMINATION, 2017

(2ND YEAR, 4TH SEMESTER)

ECONOMICS

COMPREHENSIVE – I

(Old & new Syllabus)

Time: Two hours

Full marks: 50

Use a separate Answer Script for each Group

Group A

Answer one of the following two questions:

(1). (i). A firm has two plants with cost functions $c_1(y_1) = 4\sqrt{y_1}$ and $c_2(y_2) = 2\sqrt{y_2}$. What is the cost of producing an output y ?

(5.5)

(ii). There is an agent with a strictly concave Bernoulli utility function $u(\cdot)$, trying to decide how much to invest in a risky asset. Each share of the asset yields H with probability p and L with probability $(1 - p)$, with $H > L$. The consumer has wealth w , and the price of each share is q . Let the number of shares purchased be z . Assume $pH + (1 - p)L > q$, so that the expected return on each share is greater than its cost. The agent is an expected utility maximizer and is supposed to decide on the amount (number) of share to purchase i.e. decide on z^* . Is $z^* > 0$?

Explain with proper mathematical logic.

(7)

OR

(2). (a). Suppose an agent (who is an expected utility maximizer) has the following quadratic Bernoulli utility function:

$$u(x) = \beta x^2 + \gamma x$$

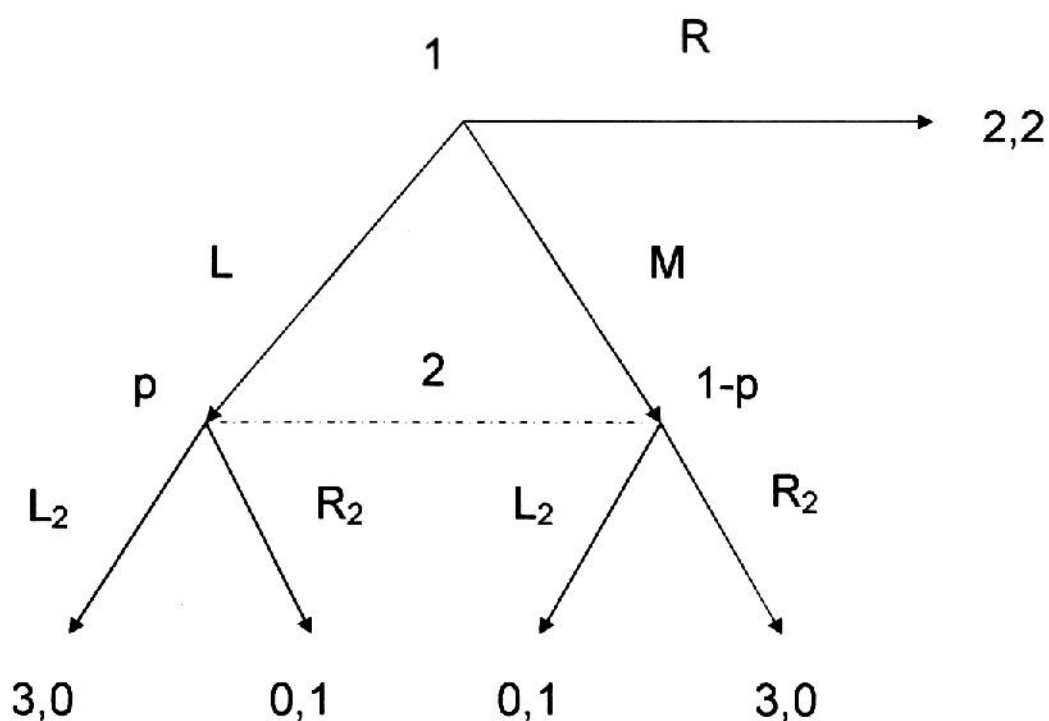
[Turn over

Show that, when comparing any two lotteries, this agent only looks at their respective means and variances. Assume x to be continuous. (6)

(b). Consider a lexicographic preference where a bundle is strictly preferred if the quantity of the first good is more. In case the quantity of the first good is same then the quantity of the second good comes into consideration and more is always better. Now consider the sequence the bundles $x^n = \left(\frac{1}{n}, 0\right)$ and $y^n = (0, 1)$ for any n . Show that the lexicographic preference is not continuous. (6.5)

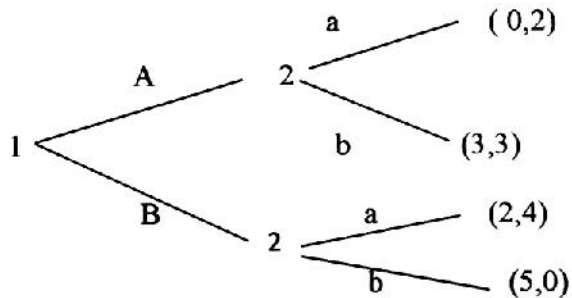
Answer one of the following two questions:

3. (a). Show that there does not exist any pure-strategy perfect Bayesian equilibrium in the following extensive form game: (6)



(b). Find the Nash equilibria and the SPNE of the following game:

(3+3.5)



OR

(4). (a). Consider a simple Cournot duopoly model (complete information) where the market demand is given by $P = a - q_1 - q_2$. Each firm has constant marginal cost given by c_1 and c_2 respectively where $c_i < a \forall i = 1, 2$. Find the Nash equilibrium of the game if $c_1 < c_2 < a$ but $2c_2 > a + c_1$?

(6.5)

(b). Two players are allocating a divisible good, in the proportion $[x, (1 - x)]$, where x belongs to the set $[0, 1]$. Utility of player 1 is $U_1 = x^2 + (1 - x)^2$. Utility of player 2 is $U_2 = (1 - x)$.

Player one proposes an allocation, $\{x, (1 - x)\}$. If player 2 accepts then they get U_1 and U_2 according to the allocation. If Player 2 rejects, then they both get zero.

- (i). What is the SPNE when Player 1 moves first?
- (ii). Does the SPNE change when Player 2 moves first?

(3+3)

Group B

Answer one of the following two questions:

1. Consider a standard Ramsey model.

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- (a) Derive Euler equation. Interpret it.
- (b) What is the transversality condition? Interpret it.
- (c) Is steady state capital in Ramsey model same with golden rule level of capital stock? If yes, why? If not, why not? Explain.

3+3+1+3+3=13

2. Consider an economy where individual lives for two periods. Individuals born at time t live for dates t and $t+1$. Assume a general utility function $U(t) = \ln c_1(t) + \beta \ln c_2(t+1)$ where $\beta \geq 0$.

Individuals work only in 1st period of life supplying inelastically one unit of labour and earning a real wage w_t . They consume a part of their income in 1st period of life and save the rest to finance their 2nd period retirement consumption. The aggregate saving of the young in period t generates the capital stock that is used to produce output in period $t+1$ along with the labour supplied in period $t+1$. The number of individuals in an economy is assumed to grow at constant rate n . $Y_t = AK_t^{1-\alpha} N_t^\alpha$. Product market and factor markets are assumed to be competitive. Show that like Solow model there exists unique steady state value of per capita physical capital and it is globally stable.

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Group C

Answer four of the following six questions:

4x3=12

1. State the difference between the neoclassical and Keynesian consumption functions in terms of the assumptions made regarding the behaviour of the consumers.

2. How did Clower explain Keynesian consumption function?

Identify the determinants of consumption demand and labour supply, when workers are not rationed in the labour market.

3. How does extension of Kaldor's macroeconomic ideas in the global context affect the policy conclusions regarding the North-South terms of trade?
4. What kind of unemployment is generated on account of the rigidity of the profit mark-up? What kind of policy should be adopted to tackle such unemployment?
5. What kind of policies for reduction of unemployment is suggested by Malinvaud's theory of unemployment? Do these policies work always?
6. What role did the Tatonnement mechanism play in the development of Benassy's disequilibrium macroeconomic framework?