

MASTER OF ARTS EXAMINATION, 2018**2ND YEAR, 4TH SEMSESTER****ECONOMICS****COMPREHENSIVE****Use separate answer script for each group****Answer one question from each group****For excellence and relevance: 2marks****Group A: Microeconomics****Time: Two and a half hour****Full Marks 50**

(1). (a). Consider the following normal form game, where player 1 chooses rows and player 2 chooses columns.

		Player 2	
		L	R
Player 1	U	u, v	m, n
	D	w, x	y, z

Suppose that $u > w$, $y > m$, $n > v$, and $x < z$.

Solve for the (non-degenerate) mixed strategy Nash equilibrium in terms of the parameters.

(b). State and explain Kakutani's fixed point theorem briefly. (8+8)

OR

(2). (a). Consider the following simultaneous-move game:

[Turn over

		P2		
		L	C	R
P1	T	3, 1	0, 0	5, 0
	M	2, 1	1, 2	3, 1
	B	1, 2	0, 1	4, 4

Suppose that the game is played twice, with the outcome from the first stage observed before the second stage begins.

- (i). How many instructions will be there in one strategy of a player?
- (ii) How many elements (strategies) will be there in each player's strategy set? Explain.

(b). Suppose a consumer has a direct utility function of the form $U(x_1, x_2) = u(x_1) + x_2$. The only possible levels of consumption for good 1 are $x_1 = 0$ and $x_1 = 1$. Assume that $u(0) = 0$ and $p_2 = 1$. For what values of p_1 the consumer will definitely choose $x_1 = 1$?

4+4+8

Group B: Macro Economics

3. (a) Consider a standard Ramsey model. Now consider an exogenous government consumption that is financed by imposition of per capita lump sum taxation. What will be the impact of government consumption and taxation on per capita consumption and per capita physical capital at the steady state? How will the results change if the government consumption is financed by tax on return to capital instead of lump sum taxation. Explain your answer with the help of diagram.
- (b) Comment in brief on the efficacy of the policies suggested by Malinvaud for removing unemployment.
- (c) Explain in brief the relationship between the rigidity of profit mark-up and unemployment.

8+ 4+4

Or,

4. (a) . What are the differences between endogenous growth models and exogenous growth models. Discuss how A K model attempted to overcome the limitation of Ramsey model. What are the limitations of AK model? How does Frankel Romer model solve these limitations?
- (b) Do the neoclassical and Keynesian theories of consumption function make different assumptions regarding the behaviour of the consumers?
- (c) How did Clower explain Keynesian consumption function?

8+4+4

Group C : Econometrics

5. (a) Distinguish between trend stationary process and Difference stationary process.
 (b) Distinguish between the random effect model and the fixed effect model.
 (c) Explain the concept of simultaneous equation bias.
 (d) Consider the model $y_i = \beta + u_i$, where y_i and u_i are random scalar variables and β is a scalar unknown parameter. u_i are iid with $E(u_i) = 0$, $E(u_i^2) = \beta^2$, $E(u_i^3) = 0$ and $E(u_i^4) = m$. Let us define an estimator of β , viz. $\hat{\beta}$ such that

$$\hat{\beta} = \frac{1}{2} \frac{\sum_{i=1}^N y_i^2}{\sum_{i=1}^N y_i} \quad 3+3+4+6$$

Or, What is the limiting distribution of the vector $\begin{pmatrix} \frac{1}{N} \sum_{i=1}^N y_i^2 \\ \frac{1}{N} \sum_{i=1}^N y_i \end{pmatrix}$?

6. (a) How do you test for existence of TSP or DSP?
 (b) Discuss the problem of identification in simultaneous equation system.
 (c) Highlight the basic difference in the assumptions of the random effect model and fixed effect model.
 (d) Consider a linear model where the dependent variable is in logarithmic form, and the lag of $\log(y)$ is an explanatory variable:

$$\log(y) = \beta_0 + \mathbf{x}'\underline{\beta} + \alpha_1 \log(y_{-1}) + u, \quad E(u | \mathbf{x}, y_{-1}) = 0.$$

- (i) For estimating $\underline{\beta}$, why do we obtain the same estimator if the growth in y , $\log(y) - \log(y_{-1})$, is used instead as the dependent variable?
 (ii) Suppose there are no covariates \mathbf{x} in the equation. Show that, if the distributions of y and y_{-1} are identical, then $|\alpha_1| \leq 1$. 4+3+3+6