2019/TDC/EVEN/ECOHC-201T/060

TDC (CBCS) Even Semester Exam., 2019

ECONOMICS

(2nd Semester)

Course No. : ECOHCC-201T

(Introductory Macroeconomics)

Full Marks : 70
Pass Marks : 28
Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **all** questions

UNIT—I

1. Answer any *two* of the following : 2×2=4

(a) What is circular flow of income?

(b) Mention two limitations of macro-economics.

(c) State two points of importance of studies of national income accounts.

2. Answer *either (a) or (b)* from the following : 10

(a) *(i)* Distinguish between macro-economics and microeconomics. 4

(ii) Discuss in brief the scope of macroeconomics. 6

(b) (i) Make a distinction between GDP and GNP at market price. 3

(ii) What is national income? Explain the value-added approach of estimation of national income. 2+5=7

UNIT—II

3. Answer any *two* of the following : 2×2=4

(a) What are meant by money and near-money?

(b) Distinguish between the crude and sophisticated versions of the quantity theory of money.

(c) Give two assumptions of liquidity preference theory of interest.

4. Answer *either (a) or (b)* from the following : 10

(a) (i) Explain the process of multiple expansion of deposits by a commercial bank. 5

(ii) What are the limits to the process of credit creation by commercial banks? 5

(b) What are the main instruments of monetary policy? Assess the effectiveness of monetary policy to tackle inflation. 5+5=10

UNIT—III

5. Answer any *two* of the following : 2×2=4

(a) Distinguish between creeping inflation and galloping inflation.

(b) State two causes of inflation.

(c) What is inflationary gap?

6. Answer *either (a) or (b)* from the following : 10

(a) Examine the effects of inflation. How can inflation be controlled? 5+5=10

(b) Explain clearly the following with the help of diagram : 5+5=10

(i) Demand-pull inflation

(ii) Cost-push inflation

UNIT—IV

7. Answer any *two* of the following : 2×2=4

(a) Give two reasons behind the use of IS-LM tool in macroeconomic analysis.

(b) What is fiscal policy?

(c) State two Keynesian arguments against monetary rule.

8. Answer *either (a) or (b)* from the following : 10

(a) (i) Compare and contrast the classical and the Keynesian models of income determination. 5

(ii) Explain the impact of changes in money supply in the Keynesian systems. 5

(b) Examine the Keynesian view on effectiveness of—

(i) monetary policy;

(ii) fiscal policy. 5+5=10

UNIT—V

9. Answer any *two* of the following : 2×2=4

(a) What are BoP deficit and surplus?

(b) Distinguish between balance of trade and balance of payments.

(c) Mention two causes of disequilibrium in balance of payments.

10. Answer *either (a) or (b)* from the following : 10

(a) Make a clear distinction between the following : 5+5=10

(i) Balance of current account and Balance of capital account

(ii) Autonomous transactions and Accommodating transactions

(b) What are the different types of disequilibrium in the balance of payments? How can the balance of payments' disequilibrium be corrected? 4+6=10

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2019/TDC/EVEN/ECOHC-202T/061

TDC (CBCS) Even Semester Exam., 2019

ECONOMICS

(2nd Semester)

Course No. : ECOHCC-202T

(Mathematical Methods in Economics—II)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

UNIT—I

1. Answer any *two* of the following questions : 2×2=4

(a) Define differential equations.

(b) Write the general solution of differential equation of the form

$$\frac{dy}{dx} + ay = b$$

(c) Solve the following equation :

$$\frac{dy}{dx} = ae^{y}$$

2. Solve the following equations : 3+3+4=10

(a) $y(1-x)-x\frac{dy}{dx}=0$

(b) $\frac{dy}{dx}+3x^2y=3x^2$

(c) $2xdy+\frac{2}{3}ydx=0$

OR

3. *(a)* The demand and supply functions, when p is the price, Q_d is quantity demanded and Q_s is the quantity supplied, are given as

$$Q_d = a-bp \qquad (a, b>0)$$
$$Q_s = -c+dp \qquad (c, d>0)$$
$$\frac{dp}{dt}=\alpha(Q_d-Q_s) \qquad (\alpha>0)$$

Analyze the market model for stability. 6

(b) Solve $\frac{d^2y}{dx^2}-7\frac{dy}{dx}+12y=0$. 4

UNIT—II

4. Answer any *two* of the following questions : 2×2=4

(a) Define idempotent matrix.

(b) What is linear transformation?

(c) Find the following determinant's value :

$$\begin{vmatrix} a-b & a+b \\ a+b & a-b \end{vmatrix}$$

5. *(a)* If

$$A=\begin{bmatrix} 3 & 1 \\ -1 & 2 \end{bmatrix}$$

find $A^2-5A+7I$. 4

(b) Evaluate : 3

$$A=\begin{vmatrix} 2 & 3 & 1 \\ 3 & 4 & 2 \\ 2 & 0 & 2 \end{vmatrix}=0$$

(c) Prove that if

$$A=\begin{bmatrix} 2 & 8 \\ 4 & 10 \end{bmatrix}$$

then $A^{-1}=\begin{bmatrix} -\frac{10}{12} & \frac{8}{12} \\ \frac{4}{12} & -\frac{2}{12} \end{bmatrix}$ 3

OR

6. *(a)* Using matrix inversion, solve the following linear system of simultaneous equations : 4

$$y-2x=6$$
$$y+4x=18$$

(b) Solve the following linear market model by using Cramer's rule : 6

$$Q_d=50-2p$$
$$Q_s=-10+3p$$
$$Q_d=Q_s$$

UNIT—III

7. Answer any *two* of the following questions : 2×2=4

(a) Define differentiable function.

(b) Find the total differential of $z = \sqrt{x+y}$.

(c) If $u = (ax_1 + bx_2 + c\sqrt{x_1 x_2})$, find $\frac{\partial u}{\partial x_1}$.

8. *(a)* Solve the following functions :

(i) Given $y = 4x_1x_2 + x_1^2$ where $x_1 = 3x_2 + 5$, find out total derivative $\frac{dy}{dx_2}$. 2

(ii) If the utility function is

$$u = \log(ax_1 + bx_2 + c\sqrt{x_1 x_2})$$

obtain the ratio of marginal utilities. 3

(b) Given $z = x^3e^{2y}$. Find all the partial derivatives of second order. 5

OR

9. *(a)* What is homogeneous function? 3

(b) Given the function $u = Ax^by^c$; A, b and c are constants.

(i) Find the conditions under which this is a linear homogeneous function. 3

(i) Apply Euler's theorem if these conditions hold true. 4

UNIT—IV

10. Answer any *two* of the following questions : 2×2=4

(a) Given the function $z = f(x, y)$, mention the first and second order conditions for maximization.

(b) Mention the geometric definition of concavity and convexity for a two-variable function $z = f(x_1, x_2)$.

(c) Define quasiconvex function.

11. *(a)* Mention the first and second order characterization of convex function with more than one explanatory variable. 2

(b) Derive the first and second order conditions in order to show that indifference curve is negatively sloped and convex to the origin taking the utility function

$$u = f(x, y)$$

where, u = total utility. x and y are the quantities of two commodities. 8

OR

12. (a) How to construct Lagrange function? 2

(b) A producer desires to minimize his cost of production $C = 2L + 5K$, where L and K are the inputs, subject to the satisfaction of the production function $Q = LK$. Find the optimum combination of L and K in order to minimize cost of production when output is 40. 8

UNIT—V

13. Answer any *two* of the following questions : 2×2=4

(a) Define input coefficient matrix.

(b) Mention Hawkins-Simon conditions.

(c) Write the economic meaning of $\sum_{i=1}^{n} a_{ij} < 1$ in Leontief static open model.

14. (a) Given $\begin{bmatrix} 0{\cdot}1 & 0{\cdot}3 & 0{\cdot}1 \\ 0 & 0{\cdot}2 & 0{\cdot}2 \\ 0 & 0 & 0{\cdot}3 \end{bmatrix}$

(i) What will be the output levels if $F_1 = 20$, $F_2 = 0$ and $F_3 = 100$? 6

(ii) Also obtain gross value added in each sector. 4

OR

15. (a) Prove that in a closed Leontief system, the absolute levels of output are indeterminate. 6

(b) Mention the limitations of input-output analysis. 4

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