Programme: MA Economics   Session: 2021-22

Semester: First   Max. Time: 3 Hours

Course Title: Mathematics for Economic Analysis   Max. Marks: 70

Course Code: SAHS ECO 01 104 C 3104

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1.   (4X3.5=14)

a) Solve $\lim_{x \to 0}(1 + \sin x)^{Cosec\, x}$

b) Solve $\int_0^{\pi/4} tan^3x \ dx$

c) Solve the following system of equations

   x+2y-z = 3

   3x-y+2z = 1

   2x-2y+3z = 2

d) Solve the difference equation $y_{t+1} = y_{t+2}$, when $y_0 = 15$

e) Check if the f(x) = x+1/x increases or decreases when x $\in$ (0,1)

f) Solve for x, f(x)= $x^2 + 7x + 12 = 0$

g) Check if f(a, b)= $\sqrt{a^2 + b^2}$ is convex or concave.

Q 2.   (2X7=14)

a) Discuss the definiteness of following functions-

$$x^2 - y^2$$
$$(x + y)^2$$
$$-x^2 - y^2$$

b) Find inverse of the matrix, A = $\begin{matrix} 2 & 3 & 4 \\ 5 & 4 & 3 \\ 6 & 5 & 8 \end{matrix}$

c) Solve $\int tan^8x \ sec^4x \ dx$

Q3.   (2X7=14)

a) Find the interval in which f(x) is strictly increasing.

   f(x) = $2x^2 - 3x$

   f(x) = $2x^3 - 24x + 5$

b) Find the interval in which the following functions are concave and convex.

$F(x) = 5x^2 - 7x$

$F(x) = x^{1/2}$

c) Check continuity of the function,

$$F(x) = \begin{cases} 2x - 1 & if\ x < -1 \\ x^2 + 1 & if\ -1 \le x \le 1 \\ x + 1 & if\ x > 1 \end{cases}$$

Q 4.   (2X7=14)

a) What is homogenous function? What are the different properties of homogenous function? Explain Euler's theorem and its economic applications.

b) The amount of pollution content added in air in a city due to x diesel vehicles is given by

$P(x) = 0.005\ x^3 + 0.02\ x^2 + 30\ x$

Find the marginal increase in pollution content when 3 diesel vehicles are added and write which value is indicated in the question.

c) Find the derivative of the functions

$Y = a^{\sqrt[3]{x}} \log x$

$Y = \cos x \sec x^2$

$Y = \dfrac{1}{a-x}$.

Q 5.   (2X7=14)

a) The demand function of a monopolist is P = 15 - 2x and the cost function is C = 2+ 2x.

Find (i) MR   (ii) MC   (iii) equilibrium output

(iv) equilibrium price and   (v) AC

b) Find a and b, such that

2x+3y+4z =2

2x+6y+az =b

x+ 6y+ z = a

has no solution.

c) Given the following utility functions, determine whether they obey the assumption of diminishing MRS:

U (x, y) = 5x + y

$U (x, y) = \sqrt{xy}$

CENTRAL UNIVERSITY OF HARYANA

Programme: M A ECONOMMICS

Session: 2021-22

Semester: FIRST

Max. Time: 3 Hours

Course Title: MACROECCONOMIC THEORY-I

Max. Marks: 70

Course Code: SAHS ECO 01 102 C 3104

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1. Answer the following questions in short: -   (4X3.5=14)
  a) Derive national income from GDP_{MP}?
  b) What is GNP deflator? What is its significance?
  c) Why is classical aggregate supply curve vertical?
  d) Show that MPS + MPC = 1.
  e) What is super multiplier?
  f) What is Kuznet's consumption function puzzle?
  g) Write the phages of business cycle with their key features.

Q 2.   (2X7=14)

  a) Define national income. Discuss various measures of national income? Why is GNP often lesser than GDP in case of developing economies like India?
  b) Discuss various methods of measurement of national income? What are the difficulties faced by developing economies like India in estimating national income?
  c) Calculate national income for a country from the following data-

Items	Rs. in Crore
Private final consumption expenditure	290
Government's final consumption expenditure	50
Subsidies	20
Gross domestic fixed capital formation	105
Indirect Taxes	70
Consumption of the fixed capital	45
Receipts of factor income from abroad	100
Payment of factor income to abroad	105
Net addition to stock	15
Exports	10
Imports	15

Q3.   (2X7=14)

a) Explain critically classical model of income and employment. Also discuss Keynes critique of classical model of income and employment.

b) Explain Keynes's model of income determination in a four-sector economy with suitable diagramme.

c) Consider the following data in an economy-

Investment,	$I = 60$
Government Expenditure,	$G = 180$
Transfer Payments,	$TR = 100$
Tax,	$t = 0.2Y$
Consumption,	$C = 60 + 0.8Yd$

Find equilibrium income and value of multiplier.

Q 4.   (2X7=14)

a) Explain critically permanent income hypothesis of consumption? How does it resolve Kuznets's empirical findings?

b) What is marginal efficiency of capital? How it is different from marginal efficiency of investment.

c) Explain critically the life cycle hypothesis of consumption.

Q 5.   (2X7=14)

a) Examine critically Samuelson model of trade cycles.

b) Examine critically Kaldor model of trade cycles.

c) Critically examine the accelerator theory of investment?

Programme: **M.A Economics**   Session: **2021-22**
Semester: **First**   Max. Time: **3 Hours**
Course Title: **Basic Economics (General Elective)**   Max. Marks: **70**
Course Code: **SAHS ECO 01 101 GE 3104**

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student needs to answer any two parts of each question. Each part carries seven marks.

Q 1.   (4X3.5=14)

   a) Explain the subject matter of economics.
   b) Discuss the need and features of sustainable development.
   c) What do you mean by total, average and marginal cost?
   d) Explain the concept of consumer equilibrium in detail.
   e) Write the central problems of an economy.
   f) Explain head count ratio of poverty estimation.
   g) Write the determinants of economic development.

Q 2.   (2X7=14)

   a) What do you mean by production possibility curve? When will it shift to the right?
   b) Explain the law of demand with the help of demand schedule. Also state the factors affecting demand for a commodity by a consumer.
   c) Explain different degrees of elasticity of demand with the help of suitable diagrams.

Q3.   (2X7=14)

   a) Explain the income method of estimating national income.
   b) Explain the primary and secondary functions of money.
   c) Define a central bank. What are the functions of central bank?

Q 4.   (2X7=14)

   a) What are common problems of underdeveloped countries? Which do you think are the most important? Why?
   b) Explain the concept of vicious circle of poverty in detail.
   c) Differentiate between economic growth and development.

Q 5.   (2X7=14)

   a) Explain the gains from trade for developing economies.
   b) Differentiate between FDI and FII. Also discuss the role of FDI for economic development a country.
   c) Write the functions of IMF.

Programme: M.A. Economics

Semester: First

Course Title: Microeconomics Theory-I

Course Code: SAHS ECO 01 101 C 3104

Session: 2021-22

Max. Time: 3 Hours

Max. Marks: 70

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1.   (4X3.5=14)

a) Define and differentiate between return to factor and returns to scale?

b) In what way consumer surplus is different from producer surplus?

c) What do you understand by indirect utility function?

d) What is meant by risk? How does it different from uncertainty?

e) What is the meaning of trans-log production function?

f) Explain the concept of monopoly control?

g) What is derived demand?

Q 2.   (2X7=14)

a) What is Slutsky substitution effect? Explain with the help of diagram Slutsky substitution effect for a fall in price of good X.

b) State and explain the law of diminishing marginal utility? How is law of demand derived from it?

c) What is difference curve? What are the assumptions on which indifference curve analysis of demand is based?

Q3.   (2X7=14)

a) Write a note on Friedman-Savage hypothesis.

b) Explain the attitude of risk-averter, risk lover and risk neutral with the help of N-M utility functions of money.

c) What is gambling? Explain individual attitudes towards gambling. How a gambler can avoid risk?

Q 4.   (2X7=14)

a) What are the three stages of short-run production function? Why does it not make any economic sense to produce in stage 1 or stage 3?

b) The production function for the firm is Q = 20 K$^{0.5}$ L$^{0.5}$. Suppose the quantity of capital is fixed at 100. If the wage rate is Rs.20 and price of output is Rs. 2 per unit, determine the optimal use of labour input.

c) Explain the short run and long run theory of traditional cost.

Q 5.   (2X7=14)

a) Graphically explain the short run price and output determination in case of firm under perfect competiton.

b) What do you understand by price discrimination? Explain the different types of price discrimination under monopoly competition.

c) Write a short note on regulated monopoly?

CENTRAL UNIVERSITY OF HARYANA

<u>End Semester Examinations April 2022</u>

Programme: M.A. Economics

Semester: First

Course Title: Economic Growth and Development-I

Course Code: SAHS ECO 01 103 C 3104

Session: 2021-22

Max. Time: 3 Hours

Max. Marks: 70

Instructions:

1. Question no. 1 has seven parts and students need to answer any four. Each part carries three and half Marks.

2. Question no. 2 to 5 have three parts and student need to answer any two parts of each question. Each part carries seven marks.

Q 1.   (4X3.5=14)
   a) What is HDI? State the components of HDI.
   b) What is demographic dividend?
   c) Define Neutrality of technical Change
   d) Differentiate between Absolute and Relative Poverty.
   e) What is physical life index and state its components.
   f) Write a note on planning versus Price mechanism.
   g) Define the concept of Disguised Unemployment.

Q 2.   (2X7=14)
   a) Define vicious circle of poverty. Discuss how the developing countries can break this vicious circle?
   b) Define economic development. Explain the characteristics of underdevelopment economies.
   c) Discuss the global efforts for achieving sustainable development

Q3.   (2X7=14)
   a) Critically explain the Rostow's theory growth with special reference to India economy.
   b) Define low level of equilibrium trap. Suggest strategies for the economy like India to get rid of this low level of income trap.
   c) Explain the Lewis model growth with special reference to its application on Indian economy.

Q 4.   (2X7=14)
   a) Discuss the neo-classical model of economic growth.
   b) Differentiate technical change and technical progress. Discuss how the technological change can bring development to third world countries?
   c) Explain the conditions for steady state growth. Highlight the factors affecting stability of steady growth

Q 5.   (2X7=14)
   a) Explain the Harod-Domar model of growth.
   b) Who should lead in the development process of a nation 'Government or markets? Elucidate.
   c) Discuss and evaluate the Mahalanobis model of development in Indian economy.