

Himachal Pradesh University, Summer Hill, Shimla-5
Centre for Distance and Online Education
Department of Economics

MA (Economics) I Semester
Paper: Elementary Mathematics for Economics
Course Code-ECON112 (DSC)

Important Instruction: All the students are required to prepare all three assignments separately. These assignments are compulsory and submit them in a time bound manner, otherwise admit card for the exams will not be generated. A sample of the title page is also attached.

Assignment- I

Maximum Marks – 7

Note: Attempt any two questions out of following:

Q1. State and explain the properties of determinants.

Q2. Solve the following equations using Cramer's rule:

$$X + Y + Z = 6$$

$$2X + 5Y + 5Z = 27$$

$$2X + 5Y + 11Z = 45$$

Q3. If the law of demand is $q = \frac{20}{p+1}$, find the price elasticity of demand when $p = 3$

Q4. If the utility function is $U = Q_1^{1/2} Q_2^{1/2}$, what will be the slope of indifference curve when $Q_1 = 20$ and $Q_2 = 40$.

3.5 × 2 = 7

Assignment- II

Maximum Marks – 7

Note: Attempt any two questions out of following:

Q1. State and explain the Euler's Theorem. What is its utility?

Q2. If the production function is $q = 2L^{3/4} K^{1/4}$ then find marginal productivity of labour and capital

Q3. Show that $4(x^2 + y^2) + 12ax - 6ay - a^2 = 0$ represents a circle. Hence find its center and radius.

Q3. Evaluate $\int \frac{3x+2}{(x+1)^2 (x-2)}$

3.5 × 2 = 7

Assignment- III

Maximum Marks – 6

Note: Attempt any two questions out of following:

Q1. Explain the assumptions, technological coefficient matrix, and the differences between closed and open input-output models in economic analysis.

Q2. (a) If the demand function is $p=25-3X-3X^2$ then find the consumer's surplus when $p=7$

(b) Explain the Hawkins-Simon Condition. Are these condition satisfied for $A=\begin{bmatrix} 0.7 & 0.2 \\ 0.4 & 0.9 \end{bmatrix}$

Q3. Discuss the uses of Linear Programming Problem (LPP) in the planning models.

Q4. Solve the following LPP by simplex method

$$\text{Maximize } z = 3x + 2y$$

$$\text{Subject to } 2x + y \leq 40$$

$$x + y \leq 24$$

$$2x + 3y \leq 60$$

$$\text{and } x, y \geq 0$$

3× 2=6

Himachal Pradesh University, Summer Hill, Shimla
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MA (Economics)Semester

Session.....

Assignment Subject:.....

Course Code:.....

Assignment No.....

Submitted by:

Name:

Registration No.....

Roll No.....

Address

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Email id.....

Contact No.

Date:.....

Signature.....