BECE - 015

Bachelor's Degree Programme
(BDP)

ASSIGNMENT
(2015-16)

Course Code: BECE- 015
Elementary Mathematical Methods in Economics

School of Social Sciences
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110 068

BECE-15 : ELEMENTARY MATHEMATICAL METHODS IN ECONOMICS

Assignment

July 2015 and January 2016

Dear Student,

As explained in the programme guide for BDP, you will have to do one assignment for this elective course in BECE-15. This is a Tutor Marked (TMA) and carries 100 marks.

Before attempting the assignment please read the instructions provided in the programme guide sent to you separately.

Submission: The completed assignments should be submitted to the Coordinator of your Study Centre on or before, **March 31, 2016 for July 2015 session and 30th September, 2016, for January 2016 session**

BECE-15:
ELEMENTARY MATHEMATICAL METHODS IN ECONOMICS
July 2015-January 2016
TMA

Programme: BDP
Course Code: BECE-15
Assignment Code: BECE-15/AST/TMA/2015-16
Max. Marks: 100

A. Long Answer Questions 2×20 = 40

1. A firm in a perfectly competitive market has the following cost function:
$C = 1/3q^3 - 5q^2 + 30q + 10$
If the market-clearing price is 6, obtain the profit maximising level of output.

2. Discuss the importance of the Hawkins-Simon conditions in input-output analysis.

B. Medium Answer Questions 3×12=36

3. Find the short run average cost for the production function $q = AL^{1/3}K^{2/3}$ where total cost (TC) = wL + rK, the symbols having their usual meaning.

4. i) Let $Y = \frac{2x^2 + 3x + 1}{3x^2 - 4x + 1}$

For what values of x will be the function be discontinuous?

ii) Show that $\frac{a_1x^2 + b_1x + c_1}{a_2x^2 + b_2x + c_2}$

tends to a_1/a_2 as $x \to \infty$

5. Determine the distance between the points:

i) (3,0,7) and (-4,8,2)
ii) (4,6,7,1) and (-3,0,2,4)
iii) The distance between the points (3,1,2,4) and (4,6,5, λ) is 200. What can be said about the value of λ?

C. Short Answer Questions 3×8=24

6. Define
   a. Adjugate of a matrix
   b. Decomposable matrix
   c. Singular matrix

7. If the demand function for a good is Q=140 – 5P, what is the price elasticity of demand at P = 15 rupees?

8. Integrate:

   (i) $x \ \text{Sin}\, x$

   (ii) $\sqrt{(a^2 - x^2)dx}$