ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD

**(Department of Economics)**

**WARNING**

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM THE AWARD OF DEGREE/CERTIFICATE IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENT(S) BORROWED OR STOLEN FROM OTHER(S) AS ONE’S OWN WILL BE PENALIZED AS DEFINED IN THE “AIOU PLAGIARISM POLICY”.**

## Course: Introduction to Mathematical Economics (9311)

## Level: BS Economics Semester: Spring, 2025

## Please read the following instructions for writing your assignments. (AD, BS, BEd, MA/MSc, MEd, MPhil and PhD)

1. All questions are compulsory and carry equal marks but within a question the marks are distributed according to its requirements.

2. Read the question carefully and then answer it according to the requirements of the questions.

3. Handwritten scanned assignments are not acceptable.

4. Upload your typed (in Word or PDF format) assignments on or before the due date.

5. Late assignments can’t be uploaded on LMS.

6. Your own analysis and synthesis will be appreciated.

7. Avoid irrelevant discussion/information and reproducing from books, study guides, or allied material.

## Total Marks: 100 Pass Marks: 50

**ASSIGNMENT No. 1**

**(Units 1-5)**

Q. 1 Discuss relations and functions and illustrate the different types of functions with examples. (20)

Q.2 Derive the quadratic formula by completing the square method, if

  (where a≠0) (20)

Q.3 Find the equilibrium Y and C, from the following: (20)

 Y= C+I0+G0

 C=25+6Y1/2

 I0=16

 G0=14

Q.4 Illustrate the basic properties of determinants with examples. (20)

Q.5 Use the crammer rule to solve the following set of equations: (20)

 8x1 – x2 =16

 2x2 + 5x3 =5

 2x1 + 3x3 =7

## Total Marks: 100 Pass Marks: 50

**ASSIGNMENT No. 2**

**(Units 6-9)**

Q.1What is the difference quotient and find the difference quotient of the following function:

Y = f(x) = 4x2 + 9 (use x in lieu of x0) (20)

Q.2 Define elasticity and find the price elasticity of demand, in the function given below: (20)

 Q = 1000 - 2p2  if p=10

Q.3 Find the general solution of the equation;  , where u=2t, w=t and ∫ udt = t2+ k (k arbitrary) (20)

Q.4 Find the time path p(t) if the demand and supply functions as follows; (20)

 Qd = 42 – 4p - 4p׳ + p⸗

 Qs = - 6 + 8p

Q.5 Find the present value of a perpetual cash flow of Rs.450 per year, (20) discounted at r = 5%.