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: Intermediate Mathematical Economics (9312)

## 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** Describe the rules of integration with examples. (20) 

**Q. 2** Let the demand and supply functions be as follows; (20)

 , , 



1. Assuming that the market is cleared at every point of time, find the time path p(t) (general solution)

(b) Does this market have a dynamically stable intertemporal equilibrium price?

(c) Assumption of the present model that Qd = Qs for all t is identical to that of the static market model. Nevertheless, we still have a dynamic model here.

How come? (20)

**Q. 3** Find the general solution of the equation; (20) ; Where we have

U=2t, w=t, and  (k arbitrary)

**Q. 4** Solve the complementary function of the equation, where: (20)



**Q. 5** On the basis of demand and supply for the Cobweb model as follows, find the intertemporal equilibrium price and determine whether the equilibrium is stable. (20)





## Total Marks: 100 Pass Marks: 50

**ASSIGNMENT No. 2**

**(Units 6-9)**

**Q .1**  Solve the following difference equations; (20)

(i)  (y0=4; y1=7)

(ii)  (y0=6; y1=3)

**Q.2** Find the time paths of the (general solution of the π and µ, given; (20)







**Q.3** Solve the following problem graphically; where; (20)

Maximize 

Subject to 





and 

**Q.4** Solve graphically and check whether the optimal solution satisfies; (a) the constraint qualification, and (b) the Kuhn-Tucker condition. (20)

Minimize 

Subject to 

and 

**Q.5** Find the feasible region of the problem, (20)

Maximize 

Subject to 



and 