

ALLAMA IQBAL OPEN UNIVERSITY
(Department of Mathematics)

WARNING

1. PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM 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 "AIOU PLAGIARISM POLICY".

Assignment Submission Schedule			
6 credit Hours	Due Date	3 credit hours	Due date
Assignment 1	15-12-2026	Assignment 1	08-01-2027
Assignment 2	08-01-2027		
Assignment 3	30-01-2027	Assignment 2	20-02-2027
Assignment 4	20-02-2027		

Note: Tutorial schedule (Rehnama-e-Tulba) will available on AIOU website: <http://www.aiou.edu.pk>

Course: Mathematics-II (248)

Semester: Autumn, 2026

Level: Matric

Please read the following instructions for writing your assignments. (SSC, HSSC & BA Programmes)

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. Late submission of assignments will not be accepted.
4. Your own analysis and synthesis will be appreciated.
5. Avoid irrelevant discussion/information and reproducing from books, and study guides of allied material.

Total Marks: 100

Pass Marks: 40

Assignment No. 1
(Units 1 to 5)

Question 1 (20)

- (a) Factorize $x^4 + 64$
- (b) Solve $(x + 5)^2 + (2x + 1)^2 - 67 = (x + 5)(2x - 1)$

Question 2 (20)

- (a) If $x = 2 + \sqrt{5}$ Then find the values (i) $x + \frac{1}{x}$ (ii) $x^2 + \frac{1}{x^2}$
- (b) Find the H.C.F. of $2x^3 + 6x^2 + 5x + 2$, $5x^3 + 10x^2 - 3x - 6$ and $3x^3 + 6x^2 - 2x + 4$

Question 3 (20)

- (a) Derive the quadratic formula for the quadratic equation $ax^2 + bx + c = 0$ where $a \neq 0$

- (b) Find two consecutive positive odd numbers given that the difference between their reciprocals is $\frac{2}{63}$

Question 4

(20)

- (a) Simplify $\frac{2x^2-5x-12}{4x^2+4x-3} \times \frac{2x^2-7x-4}{6x^2+5x-4}$
- (b) One algebraic expression is $x^3 - x^2 + 2x - 2$ and the other one is $x^3 - x^2 - 2x + 2$. Their H.C.F. is $x - 1$. Find their L.C.M.

Question 5

(20)

- (a) Solve $4x(3x - 1) - 2 = (2x - 1)(5x + 1)$ by using the factorization method.
- (b) Find the continued product of $x^6 - y^6$.

Total Marks: 100

Pass Marks: 40

Assignment No. 2
(Units 6 to 9)

Question 1

(20)

- (a) A belt and a wallet cost Rs. 42, while 7 belts and 4 wallets cost Rs. 213. Calculate the cost of each item.
- (b) Given $A = \begin{bmatrix} 1 & -1 \\ 2 & 3 \end{bmatrix}$, verify that $A^2 - 4A + 5I = 0$.

Question 2

(20)

- (a) The sum of two angles is 100° , The supplement of their first angle exceeds the supplement of the second angle by 40° . Find the angles.
- (b) Solve by the matrix inversion method.

$$\begin{aligned} 3x - 4y &= 7 \\ 5x - 7y &= 12. \end{aligned}$$

Question 3

(20)

- (a) Draw a tangent to two unequal touching circles.
- (b) Draw a tangent to a circle from a point on the circumference.

Question 4

(20)

- (a) The area of a square playground is 4500 m^2 . How long will a man take to cross it diagonally at the speed of 3km per hour?
- (b) Find the hypotenuse of the right isosceles triangle, each of whose legs is 10cm.

Question 5

(20)

- (a) Show that the points $A(5, -3)$, $B(-2, 2)$ and $C(4, 2)$ These are the vertices of a scalene triangle.
- (b) The area of a parallelogram is 144 cm^2 . Find the altitude if the base is 2m long.