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 THE "AIOU PLAGIARISM POLICY"**

Assignment Submission Schedule

6 credit Hours	*Due Date*	*3 credit hours*	*Due date*
Assignment 1	**12-06-2025**	Assignment 1	**08-07-2025**
Assignment 2	**08-07-2025**		
Assignment 3	**31-07-2025**	Assignment 2	**20-08-2025**
Assignment 4	**20-08-2025**		

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

Course: Mathematics-I (**247**) **Semester: Spring,2025**

Level: Matric / SSC

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, study guide of allied material.

Total Marks: 100 **Pass Marks: 40**

Assignment No. 1

(Units 1 to 5)

Question 1

(a) The price of 20 pens is Rs. 2000. What will be the price of 40 such pens?

(b) Rs. 3720 are to be divided into three shares in such a way that 1^{st} share would be double, triple to the 2^{nd} and 5 times to the 3^{rd} are equal. (20)

Question 2

(a) Calculate the first, quarterly and monthly premium if the age of the insured is 30 years, the policy amount is Rs. 3,00,000, the maturity time is 25 years, rate of premium is 3.5% fixed with a policy fee @0.25%

(b) An article is sold for Rs. 1000 after allowing a discount of 7% on the marked price. Find its marked price. (20)

Question 3

(a) The gross monthly pay of a person is Rs. 75,000. If Rs. 1500, Rs. 1200 and Rs. 1800 are deducted as income tax, benevolent fund and G.P. fund respectively, then calculate the net take home salary of the person.

(b) Rs. 4000 are sufficient for a family of 4 members for 40 days. For how many days Rs. 15,000 will be sufficient for a family of 5 members? (20)

Question 4

(a) What is the difference between a simple and compound profit of Rs. 25,000 for 4 years at 5% p.a.

(b) At what annual rate of profit would a sum of $Rs.900$ will increase to $Rs.1500$ in 1 year 8 months? (20)

Question 5

(a) The total annual income of a person is Rs. 6,28,500 and the exempted amount is Rs. 1,80,000. Calculate the net income tax payable at the rate of 3.50%. If the tax deducted at source is Rs. 15000.

(b) The price of a motorcycle is $Rs.75000$. If 18% sales tax is charged, then calculate the amount of sales tax on 50 such motorcycles. (20)

Total Marks: 100 **Pass Marks: 40**

Assignment No. 2

(Units 6 to 9)

Question 1

(a) Find 3 A.Ms between $\sqrt{3}$ and $9\sqrt{3}$

(b) The positive G.M between two numbers is 9 and the A.M between them is 15. Find the numbers. (20)

Question 2

(a) Using a logarithmic table evaluate $\frac{(0.0437)^{2/3}\times(1.407)^2}{(0.0015)^{1/3}\times(1.235)^{1/7}}$

(b) Prove that $\log 2 = 7\log\left(\frac{16}{15}\right) + 5\log\left(\frac{25}{24}\right) + 3\log\left(\frac{81}{80}\right)$. (20)

Question 3

(a) If $A = \{1,2,3,4,5\}$, $B = \{6,7,8\}$ and $C = \{3,4,6\}$. Verify that $(A \cap B) \cap C = A \cap (B \cap C)$.

(b) If $X = \{0,3,5\}$ and $Y = \{2,4,8\}$ then establish four binary relations in $X \times Y$. (20)

Question 4 Draw the graph of: (20)

(a) $\frac{y}{9} = \frac{x}{5} - \frac{7}{4}$.

(b) $\frac{y}{2} = \frac{2x}{9} + \frac{7}{4}$.

Question 5

(a) Find the nth term of a G.P. if $\frac{a_5}{a_3} = \frac{4}{9}$ and $a_2 = \frac{4}{9}$

(b) If $f(x) = \frac{x}{2}, 4 \le x \le 12$, and x is a multiple of 2, then find the domain and range of $f(x)$. (20)