GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

DIRECTORATE OF DISTANCE EDUCATION

Programme: Bachelor of Commerce (BCOM)

Course Name: Business Mathematics **Total Marks=30**

Semester: 1st **B.Com 1st Year**

Code: BCOM 105

Important Instructions

i. **Attempt any two questions from each assignment given below.**
ii. **Each assignment carries 15 marks.**
iii. **All questions are to be attempted in legible handwriting on plane white A-4 size paper and upload the scanned copy of the assignments on student's portal.**

ASSIGNMENT-I

Q.1. Sketch the area bounded by the following inequalities by means of a graph.

$3x + 4y \leq 24,\ \ 8x + 6y \leq 48,\ x \geq 0,\ \ y \geq 0.$

Q.2. Using elementary row-operations, find the inverse of the matrix $A = \begin{bmatrix} 2 & 3 & -1 \\ 1 & 1 & 1 \\ 0 & 2 & -1 \end{bmatrix}$.

Q.3. Solve the following equations:

$$x_1 + 2x_2 - x_3 = 3$$

$$3x_1 - x_2 + 2x_3 = 1$$

$$2x_1 - 2x_2 + 3x_3 = 2$$

ASSIGNMENT II

Q1. Prove that $7\log\frac{16}{15} + 5\log\frac{25}{24} + 3\log\frac{81}{80} = \log 2$.

Q2. Find the number of different 8-letter arrangements that can be made from the letters of the word DAUGHTER so that (i) all vowels occur together (ii) all vowels do not occur together.

Q3. For the L.P. problem $Max\ z = 3x_1 + 2x_2$ such that $2x_1 - x_2 \geq 2,\ \ x_1 + 2x_2 \leq 8$ and $x_1, x_2 \geq 0$, find z.