



# COMSATS University Islamabad, Vehari Campus

## DEPARTMENT OF MATHEMATICS 1<sup>st</sup> Sessional Examination SP19

Instructor: Dr. M. Waseem  
Program/ Class: BSM-B2 / BSE-B9 / BSE-B10  
Course: Linear Algebra (MTH231)

Time Allowed: 1 Hr  
Max. Marks: 10

Student Name: Ahmer gvb al Registration No: SP18-BSE-002

Q 1: Find solution, if it exists, of the following system of linear equations, by using Gauss Jordan method: [4]

$$\begin{aligned}x + y + z &= 1, && 1 \\x + y - 2z &= 3, && 2/3 \\2x + y + z &= 2. && -2/3\end{aligned}$$

Q 2: Find the inverse, if it exists, of the following Matrix (using reduced echelon form): [4]

$$\begin{bmatrix} 1 & 2 & 1 \\ 1 & 3 & 2 \\ 1 & 0 & 1 \end{bmatrix} \begin{array}{ccc} 3/2 & -1 & 1/2 \\ 1/2 & 0 & -1/2 \\ -3/2 & 1 & 1/2 \end{array}$$

Q 3: For what values of  $a$  does the homogeneous system of linear equations have a non-trivial solution? [2]

$$\begin{aligned}(a-1)x + 2y &= 0, \\2x + (a-1)y &= 0.\end{aligned}$$

*Signature*  
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