North South University (NSU) Sec#11

Department of Department of Mathematics and Physics Time: 25 minutes

Quiz#1 Course Code: MAT **125** (Calculus) Total Marks-10

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1. Write the augmented matrix, Solve the following system of linear equation by Gauss elimination and hence Gauss Jordan elimination method. **[5]**

$$\begin{aligned} x_1 + 2x_2 - 3x_3 + 4x_4 &= 2 \\ 2x_1 + 5x_2 - 2x_3 + x_4 &= 1 \\ 5x_1 + 12x_2 - 7x_3 + 6x_4 &= 3 \end{aligned}$$

2. Compute $A^2 + 2A + \text{tra}(A^T)$, where **[5]**

$$A = \begin{bmatrix} 5 & -7 & 1 \\ -7 & 8 & 2 \\ 1 & 2 & -4 \end{bmatrix},$$