East West University

Department of Mathematics and Physical Sciences (MPS)
Course Title: Linear Algebra and Complex Variables, Course Code: MAT 205
Time: 30 Minutes **Quiz 2** **Marks: 10**

Q1. Find the characteristic equation of the matrix [5]

$$A=\begin{bmatrix}1 & 2 & 3\\ 2 & -1 & 1\\ 3 & 1 & 1\end{bmatrix}.$$

Hence verify Caley-Hamilton theorem for A.

Q2. Consider the vector space $\mathbb{R}^2$ with the Euclidean inner product. Apply the Gram-Schmidt process to transform the basis u_1=(1, 1) and u_2=(1, 0). [5]