Subject: Linear Algebra   Subject Code   : 25MT103

Sem.   : I   Academic Year: 2025-2026

                                                   Regulation: R25

T5 - Assignment 6

1. Find cosine of θ where θ is the angle between:
   a. $u = (1,3,-5,4),\ v = (2,-3,4,1)$ in $\mathbb{R}^4$.
   b. $A = \begin{pmatrix} 9 & 8 & 7 \\ 6 & 5 & 4 \end{pmatrix},\ B = \begin{pmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{pmatrix}.$

2. For polynomials $f(t) = t + 2,\ g(t) = 3t - 2,\ h(t) = t^2 - 2t - 3,$
   a. Calculate $< f, g >,\ < g, h >,\ < f, h >.$
   b. Normalize $f, g, h.$