Jaypee Institute of Information and Technology
Department of Mathematics

Course: Matrix Computations (16B1NMA533)

Tutorial Sheet 11 [C301-3.6]

(Topics covered: Functions of Matrices, polynomials of matrices, method to find Polynomials of matrices)

1. Find A^{97} *If* $A = \begin{bmatrix} -3 & 6 \\ -1 & 2 \end{bmatrix}$.

2. Find A^{222}, if A=$\begin{bmatrix} 1 & -1 & 2 \\ 0 & -1 & 2 \\ 0 & 0 & 2 \end{bmatrix}$.

3. Find $A^{1025} + 4A^5$, *if* $A = \begin{bmatrix} -3 & 6 \\ -1 & 2 \end{bmatrix}$.

4. Find $A^{200} + A^{10} + 2I$, if A=$\begin{bmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ -4 & 4 & 1 \end{bmatrix}$.

5. Find e^A for $A = \begin{bmatrix} 3 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 1 \end{bmatrix}$.