FY BTECH SEM- I

APPLIED MATHEMATICS-I

TUTORIAL-7

Assignment on Self Study Topics

DIV- P3

INSTRUCTIONS:

- Write your name, Roll no. & batch on right hand side top corner of each page of solution.
- Write question at the beginning of the solution.
- Maintain proper flow of solution while scanning/ inserting images.
- Solution must be uploaded such that it is vertically visible.
- Solution must be focused and readable.
- No. of Uploads allowed: only 1 file (pdf/word)
- No. of attempts allowed: 1

QUESTIONS:

Q.1 Express tan 7θ in terms of powers of tan θ

Hence deduce $7\ tan^6\frac{\pi}{14} - 35\ tan^4\frac{\pi}{14} + 21\ tan^2\frac{\pi}{14} - 1 = 0$ (6 MARKS)

Q.2 Show that $2^6 sin^4\theta cos^3\theta = \cos 7\,\theta - \cos 5\,\theta - 3\cos 3\theta + 3\cos\theta$. (6 MARKS)

Q.3 If $A = \begin{bmatrix} 2 & 1 & -1 \\ 0 & 2 & 1 \\ 2 & 2 & 0 \end{bmatrix}$ verify that $A(adj\ A) = |A|I$. Hence find the inverse of $(adj\ A)$.
(6 MARKS)

Q.4 Find the matrix A , if $\begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix} A \begin{bmatrix} -3 & 2 \\ 5 & -3 \end{bmatrix} = \begin{bmatrix} -2 & 4 \\ 3 & -1 \end{bmatrix}$ (5 MARKS)