SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MATHEMATICS

QUIZ TEST-I MA101 Engineering Mathematics I

Name	
Roll No./Section	

Instructions

Read the questions carefully.
Answer all questions.
Each question carries ONE mark (no partial marking).
Total time: **20 MINUTES**.
Write ONLY ANSWERS in this page (use reverse side for rough work).
.....

1. If $\mathcal{L}^{-1}\left\{\dfrac{2}{(s+3)^2-4}\right\}$ = ...

   $(a) e^{3t}\sinh 2t$ (b) $e^{-3t}\cosh 2t$ (c) $e^{-3t}\sinh 2t$ (d) $e^{2t}\sinh 3t$

2. What is the rank of the matrix $\begin{bmatrix} 0 & 1 & 0 & 2 \\ 0 & 0 & 1 & 1 \\ 0 & 0 & 3 & 2 \end{bmatrix}$?

   (a) 1 (b) 2 (c) 3 (d) -2

3. The system of equations $\begin{bmatrix} 1 & 1 & 1 \\ 0 & -1 & 1 \\ 0 & 1 & 1 \end{bmatrix}\begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 0 \\ 1 \\ 1 \end{bmatrix}$ has

   (i) no solution. (ii) unique solution. (iii) infinitely many solutions. (vi) none of these.

4. If the vectors v_1, v_2, v_3, v_4 be such that $v_1 = 2v_4$ then v_1, v_2, v_3, v_4 are .....

   (a) linearly dependent. (b) linearly independent. (c) none of these.

5. The number of vectors in a basis of the vector space $\mathbb{R}^{64}$ over the real field is equal to.....

   (a) 3^2 (b) 2^{64} (c) 64^2 (d) 4^3

←

– Good Luck –