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BIEEE-001

B.Tech. – VIEP – ELECTRICAL ENGINEERING (BTELVI)

00366

Term-End Examination

June, 2016

BIEEE-001 : DYNAMIC SYSTEM SIMULATION

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. Each question carries equal marks. Use of scientific calculator is allowed.*

1. Design a Simulink-model of any Digital Control System and write some applications of Simulink in Electrical Engineering. *10*

2. Explain the stepwise procedure for the analysis of a system expressed in time domain using MATLAB functions. *10*

3. Discuss the blockset based simulation of a discrete time system using first order transfer function model. *10*

4. Describe the computer simulation of a pneumatic system using transfer function models of continuous time blocksets. *10*

5. How are MATLAB and SIMULINK used for the simulation of 'Power Electronic Circuits' ? Using SIMULINK block, prepare the simulation of an inverter fed induction motor drive. *10*

6. Explain the empirical distributions and queuing models used in statistical simulation. *10*

7. Consider the two matrices,

$$A = \begin{bmatrix} 2 & 4 \\ 6 & 8 \end{bmatrix} \text{ and } B = \begin{bmatrix} 0 & -1 \\ 6 & 11 \end{bmatrix}.$$

Write an m-file to execute the following functions : *2×5=10*

(a) $A \times B$

(b) $A + B$

8. Discuss the steady state behaviour of finite population models applied to statistical simulation. *10*

9. Write short notes on any ***two*** of the following : *2×5=10*

(a) Markovian models

(b) Inter-conversion of models

(c) Simulation of ARMA process
