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

00474 **Term-End Examination**

June, 2017

BIEEE-001 : DYNAMIC SYSTEM SIMULATION

Time : 3 hours _Maximum Marks : 70_

Note : _Attempt any **five** questions. All questions carry equal marks._

1. (a) What is Simulink ? Elaborate its applications in the modelling of non-linear systems. `7

    (b) Explain the importance of Simulink as a model-based design environment for simulation of dynamic systems. How is it used as a graphical block programming tool with a customizable set of block libraries ? 7

2. (a) Write down the salient features of Simulink for modelling, simulating and analyzing any digital control system. 7

(b) What are the various MATLAB functions used for time-domain and frequency-domain analysis ? Explain these functions briefly. 7

3. (a) Explain command window, edit window and figure window used in MATLAB. 7

(b) Explain the procedure to obtain the simulation model of an induction motor driven from inverters. 7

4. (a) Explain the various steps involved in the simulation of a generalized machine model for an induction motor with the help of Simulink. 7

(b) Discuss the characteristics of various queuing systems. What would be the strategy adopted to simulate these in a Simulink environment ? 7

5. (a) Explain the procedure for the design of a Simulink based simulation model for the analysis of Ward Leonard system of speed control. 7

(b) Discuss the simulation steps used for the modelling of 'AR process' in MATLAB/Simulink. 7

6. (a) Explain the steps involved in the simulation of a pneumatic system using the transfer function model over the MATLAB platform. 7

(b) How would you simulate a three-phase semi-converter feeding a purely resistive load with the help of MATLAB/Simulink ? 7

7. Write short notes on any **two** of the following : *2×7=14*

(a) Statistical Models in Simulation

(b) Inter-Conversion of State Models

(c) Matrix Operations in MATLAB

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