

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER–VIII • EXAMINATION – SUMMER • 2014

Subject Code: 180804**Date: 27-05-2014****Subject Name: Modelling and Simulation Techniques****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What is the difference between Block Parameters and Tunable Parameters? Explain in details. **07**
- (b) List and explain the graphical representation of a block that has states. **07**
- Q.2** (a) Explain the basic elements of Simulink Software. **07**
- (b) Explain the Model compilation, Simulation loop phase and Link phase in details. **07**
- OR**
- (b) What do you mean by Algebraic loop? Which techniques is used to eliminate the Algebraic loop **07**
- Q.3** (a) Define the following: **07**
- | | |
|-----------------------------|------------------------|
| (1) Block diagram Semantics | (4) Model Method |
| (2) Time Step | (5) Block Sample Times |
| (3) Block Method | (6) Signals |
| | (7) Custom Block |
- (b) Explain System and Subsystem. **07**
- OR**
- Q.3** (a) Draw and explain Triangle Wave Generator model. **07**
- (b) Explain Modeling Electronic Component. **07**
- a.) Parameterizing an Exponential diode from a Datasheet.
- Q.4** (a) Explain which are the components used in Simelectronics libraries. **07**
- (b) Explain modelling of continuous system with example. **07**
- OR**
- Q.4** (a) Explain model of a DC motor driven by a constant input signal that approximates a Pulse-width Modulated signal and look at the current and rotational motion at the motor output. **07**
- (b) Explain Runge-Kutta method in details. **07**
- Q.5** (a) Formulated to Solve Series RLC Using Resistor Voltage and Inductor voltage with diagram. **07**
- (b) Explain the difference between the discrete solver and continuous solver. **07**
- OR**
- Q.5** (a) Explain the basic steps to use the Simulink software in brief. **07**
- (b) Specifying Simulation Accuracy/Speed Tradeoff parameters. **07**
