5E5102

Roll No. _____ Total No of Pages: 2

5E5102

B. Tech V Sem. (Main/Back) Exam. Nov-Dec. 2015
Computer Science & Engineering
5CS2A Digital Logic Design

Time: 3 Hours **Maximum Marks: 80**

Min. Passing Marks Main: 26

Min. Passing Marks Back: 24

Instructions to Candidates:

*Attempt any **five questions,** selecting **one question** from **each unit.** All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.*

Units of quantities used/calculated must be stated clearly.

Use of following supporting material is permitted during examination.

1. NIL 2. NIL

UNIT-I

Q.1 (a) What are various levels of abstraction in VHDL? Also explain its structure. [8]

(b) What are the Basic Modeling Constructs in VHDL? [8]

OR

Q.1 (a) What are the Data Types in VHDL? Explain with example. [8]

(b) Write VHDL code for ripple carry adder and draw its simulation waveform. [8]

UNIT-II

Q.2 (a) Describe the sub programs and explain types of sub programs. [8]

(b) Describe the resolved signals with suitable example. [8]

OR

Q.2 (a) Explain packages and use clauses of VHDL language. [8]

(b) Compare the component declaration and component instantiations. [8]

UNIT-III

Q.3 (a) What are clocked sequential circuits? Give some examples of clocked sequential circuits. [8]

(b) What is the difference between Moore and mealy state machines? [8]

OR

Q.3 (a) Describe conversion of ASM charts to hardware with a suitable example. [8]

(b) Explain concept and working of FPGA and PLD. [8]

UNIT-IV

Q.4 (a) Explain the stable and unstable states and explain the reduction of the basic state table. [8]

(b) Explain the race free assignment by using K-map of four state variables. [8]

OR

Q.4 (a) Define Event Driven Circuits and write steps for designing these circuits. [8]

(b) What is the difference between Dynamic hazards and Functional hazards? [8]

UNIT-V

Q.5 (a) Describe the logic block and interconnection in the FPGA architecture and explain the nearest neighbor connectivity. [8]

(b) What are different approaches to achieving programmability? [8]

OR

Q.5 Write short notes on following:-

(a) SRAM [8]

(b) Flash Memory [8]
