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B.E. 6th Semester (ECE) Examination, December-2011

DIGITAL SYSTEM DESIGN

Paper - EE-310-E

Time allowed : 3 hours]

[Maximum marks :100

Note : Attempt any five questions. All questions carry equal marks.

1. (a) What is data object? Explain all its categories. 10
(b) What are operators? Explain all the six different types. 10
2. Differentiate between : 5×4
(i) Sequential and Concurrent Statements
(ii) Arrays and Loops
(iii) Function and Procedure
(iv) Transport delay and Inertial delay
3. Explain the following :
(i) Package and Libraries 7
(ii) Generics 6
(iii) Identifiers 7

4. (a) Write VHDL Code for 4 : 1 multiplexer using :

(i) IF Then Else statement

(ii) Case Statement

15

(b) What is subprogram overloading?

5

5. (a) Write a VHDL code for MOD - 10 counter in :

(i) Structural Modelling

(ii) Behavioural Modelling

15

(b) What is difference between :

(i) Combinational and Sequential Circuits

(ii) Flip-Flop and Latch

5

6. (a) Draw VHDL code for 4 bit serial in and serial out right shift register using behavioural style of modelling.

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(b) Write VHDL code for full adder using two half adder in structural style of modelling. Also write down the truth table and draw circuit diagram.

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(3)

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7. (a) Explain how a simple micro computer system works. Explain its implementation using VHDL.

15

- (b) Compare RAM with ROM.

5

8. Write short notes on :

7+7+6

(i) PEEL

(ii) PAL

(iii) FPGA