

C 80790

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**SIXTH SEMESTER B.TECH. (ENGINEERING) [09 SCHEME] DEGREE
EXAMINATION, APRIL 2015**

AI 09 L03—DIGITAL DESIGN WITH VHDL

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. What is a model? What is the main use of a model ?
2. What is an object ? Give the different classes of objects ?
3. With its syntax, define an array.
4. How to represent a package declaration ? Provide its syntax.
5. Give the reasons needed for the portability of files.

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Discuss about the various stages involved in simulating a model.
7. How do you initialize a variable or constant of an array type ? Explain with its syntax.
8. Write an entity declaration for a lookup table ROM modeled at an abstract level. The ROM has an address input of type lookup_index, which is an integer range from 0 to 31, and a data output of type real. Include declarations within the declarative part of the entity to define the ROM contents, initialized to a number of your Choice.
9. Elaborate about the IEEE standard logic 1164 resolved subtypes with example.
10. Write short notes on attributes on signals and attributes of named items.
11. How to share information from reading from files and writing to files ?

(4 × 5 = 20 marks)

Part C

Answer all questions.

12. (a) What are the different lexical elements in VHDL ? Discuss.

Or

- (b) With neat illustration, converse about the CASE sequential statements in VHDL programming.

Turn over

13. (a) What are the different types of unconstrained array types ? Give its syntax and explain with an example.

Or

- (b) (i) Give the syntax of inertial and transport time delays and explain. (6 marks)
(ii) Write a WAIT statement that suspends a process until a signal changes from '1' to '0' while an enable signal on is '1'.

(4 marks)

14. (a) Explain the subprograms and constants in package declarations with an example.

Or

- (b) Elaborate about configuring component instances with illustration.

15. (a) What is a subprogram ? How to declare files in a subprogram ? Discuss with an example.

Or

- (b) Explain with an example about the testing of sequential logic circuits.

(4 × 10 = 40 marks)