DSD

Important Questions

Short Questions

Q.1 Define entity with syntax and example

Q.2 Write a VHDL code for half adder

Q.3 Differentiate between concurrent and sequential statement

Q.4 Write a short note on PLA

Q.5 What is CAD tool? Explain it.

Q.6 What are Hardware Description Languages?

Q.7 State the advantages of HDL's.

Q.8 What do you mean by Enumeration data type?

Q.9What is subtyping used for

Q. 10What is a Race condition?

Q.11What are predefined Attribute?

Q.12 Explain concurrent statement?

Q.13 Explain conditional statements with example.

Q.14 What are sequential statements?

Q.15 What is the logic equivalent of CASE and IF ELSE statement?

Q.16 Explain the assertion statement?

Q.17 What is the prime use of signal? Quote suitable example

Q.18 Write short note on: Guarded Signals.

Q.19 What are Generate Statements?

Q.20 What is the use of Report Statement in VHDL?

Q.21 What are signal assignment and variable assignment statements?

Q.22 How are configurations useful in VHDL model?

Q. 23 What do you mean by simulation?

Q. 24 Define test Bench. What is the purpose of test bench?

Long Questions

Q.1 Write the capabilities of VHDL

Q.2 What is a operator? Define its all types

Q.3 Define data types. Discuss its all types in detail.

Q.4 Explain all types of data used in VHDL

Q.5 Define and discuss with suitable examples all types of overloading.

Q.6 What is Package declaration and Package body? Explain it with example

Q.7 Write a short note on structural style of modeling

Q.8 Write a short note on

a. Process statement

b. Functions and Procedures

c. Case statement

Q.9 Write a VHDL code for 4:1 Multiplexer

Q.10 Write a VHDL code for full adder.

Q.11 Write a VHDL code for 4 bit up counter.

Q.12 Write a VHDL code for 4 bit SISO register.

Q.13 Write a short note on

a) CPLD

b) FPGA
c) PAL

d) PEEL

Q.14 Write a short note on ALU and CPU

Q.15 Explain the architecture of simple microcomputer system.

Q.16 What are CAD tools? Name different types of CAD tools available for digital system.

Q.17 What are the various features that distinguish VHDL from various HDL's?

Q.18 Explain various types of data object.

Q.19 What are constants? How are constants declared?

Q.20 What are the different logic levels available in standard logic type?

Q.21 What is overloading concept? Explain with an example.

Q.22 What are different types of delays

Q.23 What is the difference between inertial and transport delay? Given examples of each.

Q.24 Create the architecture block for the 3-input XOR gate and add a 25ns inertial delay to the XOR Assignment statement.

Q.25 What is meant by instantiating a component?

Q.26 Compare different styles of model?

Q.27What is a statement? How are they classified?

Q.28 Why wait statement is normally used at the end of process and not at the beginning?

Q.29 Explain the following statements:

(i) Loop Statement

(ii) Return Statement

(iii) Null Statement.

Q.30 Explain the following statements:

(i) Next

(ii) Assertion

(iii) Exit.

Q.31 Enumerate comparison between concurrent and sequential statements, report string expression [severity expression];

Q.32 Define Resolution Function.

Q.33 What are Package? How are these formed and used in VHDL models?

Q.34 What are subprogram? What are the different types of subprograms used VHDL?

Q.35 Enumerate the differences between functions and procedures Explain with suitable example. How do procedures differ from functions?

Q. 36 What is the role of attributes and explain different types of attributes?

Q. 37 How generic statement useful in VHDL code?

Q. 38 What is top down methodology? Give example.

Q. 39 How does the look-a head carry adder speed up the addition process?

Q. 40 Describe the operation performed by following logic circuits.

(i) Decoder

(ii) Encoder.

Q. 41What is a parity bit generator? Draw a circuit diagram of 9-bit parity generator and write VHDL code for it.

Q. 42Write a VHDL code for one-bit full adder using mixed style.

Q. 43 Distinguish between combinational and sequential circuits.

Q.44 Write a VHDL model for a falling edge trigged D flip-flop.

Q. 45Write VHDL code for rising edge flip-flop with Asynchronous reset and clock enable.

Q. 46 Write a VHDL code for level sensitive D flip-flop.

Q. 47 Write a VHDL code for master-slave J-K flip-flop.

Q. 48(a) Design a 3 bit up-down counter and write VHDL code for it.

(b) What is the difference between the counting sequence of an up counter and down counter?

Q. 49 Design and implement a synchronous 3 bit up/down counter using J-K flip-flop.

Q. 50 What are the applications of shift register?

Q. 51 Discuss the 8 bit serial to parallel and parallel to serial shift register and write code for the

same.

Q. 52 Design a 3-bit binary UP/down counter with a direction control M.

Q.53 Explain different data transfer in shift register.

Q. 54 What is the difference between a microprocessor and a microcomputer? What is the difference between a single chip microcomputer and a microprocessor chip?

Q. 55 What are the basic components of a microcomputer? Explain the operation of microcomputer.

Q. 56 Write short note on the design of microprocessor.

Q. 57 Explain with general block diagram the memory unit of microprocessor.

Q. 58 Explain the functions of control unit in operation of general purpose processor..

Q. 59 What are Programmable Logic devices?