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DCEL301

Reg. No.

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III Semester B.Sc. Degree Examination March/April - 2024

ELECTRONICS

Programming in C and Digital Design using Verilog

(NEP Scheme 2020)



Paper : III

Time : 2½ Hours

Maximum Marks : 60

Instructions to Candidates:

Answer ALL the questions from Part-A, any Four from Part-B and any Four questions from Part-C.

Note: It is required to answer all the questions of Part-A in any one page and to be answered only once. In this Part, answering the same question multiple times will not be considered for evaluation.

PART-A

Answer ALL the subdivisions.

(12×1=12)

1. i) In the standard library of C programming language, which of the following header file is designed for standard input output operations?
 - a) conio.h
 - b) stdio.h
 - c) ctype.h
 - d) math.h
- ii) Which of the following is an invalid data type in C?
 - a) int
 - b) float
 - c) double
 - d) real
- iii) What is the output of this statement "printf("%d", a++);"?
 - a) The value of(a+1)
 - b) The value of(a+2)
 - c) Current value of a
 - d) Error message

[P.T.O.]



- iv) Which of the following operator is not a relational operator in C?
- a) ==
 - b) <=
 - c) /=
 - d) !=
- v) The keyword used to transfer control from a function back to the calling function is:
- a) switch
 - b) goto
 - c) go back
 - d) return
- vi) A Pointer is :
- a) A keyword used to create variable
 - b) A variable that store address of Instruction
 - c) A variable that store address of other variable
 - d) All the above
- vii) Which is legal negative number in verilog?
- a) 4'd-3
 - b) 6'-d3
 - c) -6d'3
 - d) None
- viii) Default Value of Variable Data type in Verilog is
- a) 0
 - b) X
 - c) 1
 - d) Z
- ix) Which level of abstraction is available in Verilog but not in VHDL?
- a) Behavioral Level
 - b) Data Flow Level
 - c) Gate Level
 - d) Switch Level
- x) Which is the correct way of specifying time scale in Verilog?
- a) 110ns/10ps
 - b) 100ns/10ps
 - c) 100ns/12ps
 - d) 101ns/10ps



- xi) Operator which precedes the operand is known as _____
- a) Unary b) Binary
- c) Ternary d) None of these
- xii) The identifier beginning with _____ character is interpreted as system task or system function.
- a) ^ b) \$
- c) # d) //

PART-B

Answer any FOUR questions.

(4×7=28)

2. What are Library functions in C? Explain any three string functions with illustrations. (7)
3. a) Distinguish between while and do-while statements with example.
- b) Write the syntax to access array elements. (5+2)
4. Explain how to initialize structure variables with an example. (7)
5. a) Mention any five differences between VHDL and Verilog programming.
- b) Write a basic module in verilog programming. (5+2)
6. Explain the Arithmetic and logical operators in verilog with examples. (7)
7. Explain the initial and always statements in behavioural modelling with the help of example. (7)

PART-C

Answer any FOUR questions.

(4×5=20)

8. Write a C program to generate prime number up to an integer N.
 9. Write a C program to calculate factorial of given number.
 10. Write a C program to add two matrices of order mxn.
 11. Write a Verilog code for Full Adder Circuit.
 12. Write a Verilog Code to implement JK Flip Flop.
 13. Write a Verilog Code to implement 4:1 MUX.
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