Code: 20CS11T Register No_

I semester Diploma Examination, May-2024

FUNDAMENTALS OF COMPUTER

Time:3 Hours] **Max. Marks :100**

Instructions: (i) Answer ONE full questions from each section

(ii) ONE full question carries 20 marks.

SECTION-I

1 a. Define Number System.Explain the types of Number System with example. 10

b. Convert the following: 4
i. Binary to Decimal : (101101)2
ii. Decimal to Octal: (158)10

c. State Demorgan' s first theorem with logic gates and truth table. 6

2 a. Define logic gates. Explain universal Gates with logic symbol expression and truth table. 10

b. i. Find one's complement of :10111010 4
ii. Find two's complement of :1011101

c. List Boolean Algebra rules. 6

SECTION-II

3 a. Explain the working of full adder with logic diagram and truth table. 10

b. Explain the working of 4:1 multiplexer with truth table and logic diagram 10

4 a. Define: i. Combinational circuit ii. Subtractor iii. Multiplexer 6

b. Define flip flops. List the different types of flip flops. 4

c. Define Shift Registers. Explain the working of SISO. 10

SECTION-III

5 a. Explain the working of clocked RS flip flop. 10

b. List the applications of Counter. 4

c Define: i. Counter ii. Coder iii. Encoder 6

6 a. List and explain the generation of Computer. 10

b. Define hardware. List the different types of computer hardware components 5

c. List the application of Computer 5

SECTION-IV

7 a. With neat diagram explain the functional unit of Computer. 10

b. Define : i . System software ii. Open source iii. Freeware 6

c. Differentiate between Multiuser and Multiprocessor Operating System 4

8 a. Define Network. List and explain the different types of Network 10

b. Define OS. List the different types of OS. 6

c. Arrange different types of Memory in hierarchy of increasing order of their speed and cost. 4

SECTION-V

9 a. Write an algorithm to find the largest of two numbers 10

b. Define Flowchart. Write the notations or symbols used in the Flowchart 10

10 a. Define Variable. List the rules used for naming Variables 10

b. Draw the Flowchart to find whether a given number is Odd or Even 10