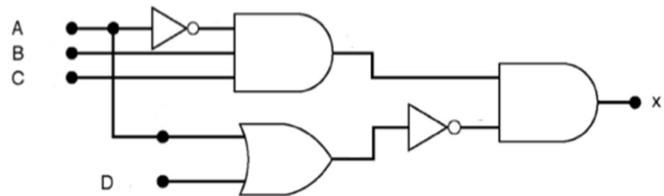


B.Tech First Semester End Term Examination - 2021**Name of Subject: Introduction to Programming****Paper Code: UCS12B01****Full Marks: 50****Time: 2 Hours****The figures in the margin indicate full marks for the questions****Candidates are required to give their answers in their own words as far as practicable****Answer all the questions:****Part A (10 Marks)****(1x10=10)**

- How is application software different than system software?
- Write down the role of an Operating System.
- Discuss the function of a compiler?
- Define process and thread in Operating System.
- Which gates are called Universal Logic gates and why?
- How process scheduling works?
- What is deadlock? When does it occur?
- Find the output of the following program :

```
main()
{
  int a = 10, b = 15;
  change (a, & b);
  printf ("%d%d", a,b);
}
change (int X , int *y)
{ x = 20; *y = 30; }
```
- Distinguish between syntax errors and logical errors.
- Find the expression of X from the circuit below.

**Part B (16 Marks)****(4X4=16)**

- Explain one drawback of using pointer through one program.
- Implement logic circuit for the following functions:
 - $Y = (A.B) + (C.D).E$
 - $X = A + (C+D).(B.A)$
- Implement logic circuit for the above functions using only NAND gate.
- Draw and explain the memory architecture in computers.

Part C (24 Marks)**(6X4=24)**

- Implement a function using C program to find power of an integer value.
- Implement a function using C program and pass an array to that function as argument.
- Implement an array using C program to arrange user entered integers in ascending order.
- Implement a string using C program and count the number of times a given character appears in the string.
