DLD, Mid semester Exam

IIITS, Chittoor

Date: 19/12/2022 Time 90 Mins Maximum Marks 12M

Instructions

1. Answer all questions
2. Do not copy from any source, if found, you will be penalized according to institute norms.
3. Write neatly in A4 sheets (White). Take appropriate assumptions if required.
4. On all pages write
    a. Your name
    b. Roll number
    c. Question paper code
5. Scan properly and convert into.pdf format as a single file (Only pdf is allowed)
6. For uploading the file in **Google Classroom**, Name the file as "**Rollno.pdf**"
   If you don't upload the correct file or if you submit an invalid file, e-mailing faculty or uploading later is not allowed.

Paper code: R-10

1. (a). Simplify the following expression using Boolean Algebra [2 M]

   i) x'y'z'+(x+y+z')'+x'z'+(x+y')z
   ii) (x'+y'+z')(x'+y+z')(x'+y+z)

   (b). X=1011, Y=1110, Perform X-Y and Y-X using 2's complement method [2 M]

2. Convert the numbers.
   (a). $(4B.E)_{16}$ to binary and octal number system. [2 M]
   (b). Write the number 13 in BCD, Excess-3, (8,4,-2-1) and Gray Code [2 M]

3. Write the simplified Boolean expression for the output function F using Boolean Algebra and draw the logic circuit

   [2 M]

Inputs			Output
a	**b**	**c**	**F**
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	1

4. Express the Boolean functions *F = A'B' + ABC'+AB'C* as sum of Minterms and product of Maxtems and draw the logic circuits [2 M]

—----End—------