UNIVERSITY OF CALCUTTA

FAKIRCHAND COLLEGE

B.Sc. (HONOURS) SEMESTER-I, 2021

INTERNAL ASSESSMENT

F.M. – 30 TIME- 1hr

CMS-A-CC-1-1-TH

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(Answer Question no. 1 and any four from the rest)

1. Answer any four questions: $1.5 \times 4 = 6$

a) What is combinational logic?

b) What is Weighted Code?

c) Convert the Binary Code into Gray Code $(100010101)_2$

d) Convert $(10010101011101)_2$ into a Hex.

e) Convert $(BCDE16)_{16}$ into Octal.

f) What is Parity bit ?

g) Subtract the following using 2's complement: $(01011)_2 - (10001)_2$

2. Design a full adder using NAND gate. 6

3. Design a 4X1 MUX using NAND gate. 6

4. Design a Decimal Priority Encoder. 6

5. Design a 3X8 decoder using NAND gate. 6

6. What is race around condition in JK flip-flop? How it is eliminated in JKMS? 3+3

7. Design an Asynchronous MOD-8 Up-Down counter. 6

8. Draw a block diagram of a computer system. 6

9. Difference : a) Rom and Ram. b) Software / Hardware. 3+3

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PAPER – CMSA-CC-1-2

(Answer Question ***no.1*** and any ***four*** from the rest)

1. Answer any ***four*** question: $1.5 \times 4 = 6$
   a) What is data type?
   b) Define operator.
   c) What is the use of *printf* in C ?
   d) Define arithmetic operator.
   e) Define pointer in C.
   f) What is recursion?
   g) What is bit manipulation?

2. Define algorithm. What are the characteristics of it? 2+ 4
3. Differentiate increment and decrement operator in C. 6
4. Explain conditional statement with an example. 6
5. Define variables. How many variables are there in C? Explain. 2 + 4
6. Define call by value and call by reference with proper example. 3 + 3
7. Explain array with a program. 6
8. Write the factorial program using C. 6
9. What is loop? How many loops are there in C? Explain. 2 + 4