Manirank.

Avinashilingam Institute for Home Science and Hr Education for Women

(Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD)
Re-accredited with 'A++' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment Test I – August 2024
I SEMESTER

Class : I UG **Time: 2 hours**
Major : Computer Science / Computer Applications **Max.Marks: 60**

23BCSC02 / 23BCAC01 Computer System Architecture

Course Outcomes:
At the end of the course, students will:

1. Apply Boolean Logic in circuit design with gates and other digital hardwares
2. Distinguish the application of various micro-operations in Register Transfer Language.
3. Handle the various parameters related to instruction execution.
4. Understand the control unit implementation and CPU instruction handling.
5. Appraise the various information storage - retrieval concepts and I/O transfer methods

Part-A **6x1=6**
Choose the correct answer

1. The output of a 2-input OR the gate is 0 only when it' CO1K1
   a. both inputs are 0 b. either input is 1 c. both inputs are 1 d. either input is 0

2. Karnaugh map (K-map) technique provides a systematic method for simplifying ——— CO1K1
   a. multiplexers b. logic gates c. Boolean expressions d. none of these

3. In Sequential circuits the output states depend upon CO1K1
   a. Past input states b. Present input states c. Present as well as past d. None of the above

4. Full adder can realized using CO1K1
   a. One half adder, two OR gates b. Two half adder, One OR gate
   c. Two half adder, two OR gates d. None of these

5. RTL stands for CO2K2
   a. Random transfer Language b. Register transfer Language c. Resistor transfer Language
   d. Register Transfer Level

6. Which micro-operations carry information from one register to another? CO2K2
   a. Register transfer b. Arithmetic c. Logical d. All of these

Part- B **3x6=18**
Answer ALL Questions
Each answer should not exceed 400 words or two pages

7. a. Write short notes on complements. CO1K1
   (or)
   7. b. State and prove De-Morgan's theorems CO1K2

8. a. Design a full adder using two half adders and an OR gate. CO1K1
   (or)
   8. b. Implement SR flip flop using NAND gates CO2K3

9. a. Define RTL. Explain how register transfer takes place in basic computer system. CO2K2
   (or)
   9 .b. Write short note on computer registers CO2K2

Part-C **3x12=36**
Answer ALL questions
Each answer should not exceed 800 words or four pages

10. a. Define Logic Gate and discuss various gates with diagram and their truth table CO1K3
    (or)
    10. b. Simplify the following Boolean expression using Karnaugh Map method
    $F(A,B,C,D) = \Sigma(1,2,3,5,9,12,14,15) + d(4,8,11)$. CO1K2

11. a. Implement JK Flip-flop with truth table and logical circuit CO1K4

(or)

11. b. What is meant by Multiplexer? Explain with diagram and truth table the operation of 4-to-1 line multiplexer. CO2K4

12. a. Explain the different types of Micro operations in detail. CO2K1

(or)

12. b. Discuss Bus and Memory transfer in detail. CO2K1

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Campus II:65+66