Code No: F-13688/N/BL/AICTE

FACULTY OF ENGINEERING

B.E. (ECE) IV - Semester (AICTE) (Main & Backlog) (New) Examination, August / September 2024

Subject: Computer Organization & Architecture

Time: 3 Hours Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each question carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. a) Compare Von Neuman and Harward Architecture.
   b) What is Normalization and Alignment in Floating Point Arithmetic?
   c) Compare Hardwired and Microprogrammed control unit.
   d) Write the program in assembly language that evaluates X = (A + B) • (C + D) using three address instructions.
   e) What are the addressing modes that does not need address field? Give examples.
   f) What are the functions of I/O Interface?
   g) Define Address space and Memory space.

2. a) Determine the product of -9 x -13 showing step by step multiplication using Booth Algorithm. Assume 5-bit registers.
   b) Explain the process of Floating-point division with a flow chart.

3. a) Explain the common bus system with a neat diagram.
   b) List the control function and microoperations needed to execute the following Instructions:
   (i) CIR (ii) SZA (iii) LDA (iv) ISZ (v) OUT

4. a) Compare RISC and CISC processors.
   b) Explain about Instruction pipeline.

5. a) Explain DMA controller with neat block diagram.
   b) Explain DMA transfer with block diagram.

6. What is cache memory? Explain the different mapping techniques in Cache memory.

7. a) Write short notes on Virtual Memory.
   b) Explain Interrupt driven I/O.

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