

FACULTY OF ENGINEERING

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

Subject: Computer Organization

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) Define the basic functional units of a computer and their roles.
b) What are the basic concepts of memory systems in computers?
c) Explain the different addressing modes in 8085.
d) What is a stack in the context of microprocessors, and how is it used?
e) What is the RS-232C standard, and how is it used in serial communication?
f) Explain the role of the program counter in the 8085 microprocessor.
g) What are the basic concepts of interfacing peripherals with a microprocessor?
2. a) Discuss the different types of computers and their applications. How have they evolved over time?
b) Explain the concept of direct memory access (DMA). How does it differ from interrupt-driven I/O, and what are its benefits?
3. a) Compare and contrast cache memory with main memory. How does cache memory enhance system performance?
b) Evaluate the challenges associated with memory management in computers. How do operating systems handle these challenges?
4. a) Discuss the architecture of the 8085 microprocessor.
b) Compare the 8085 microprocessor with modern microcontrollers. What are the key differences in terms of architecture and functionality?
5. a) Analyze the process of interfacing peripherals with the 8085 microprocessor.
b) Explain the operation of the Intel 8259A Programmable Interrupt Controller.
6. a) Explain the operation of the Intel 8279 Programmable Keyboard/Display Controller.
b) Discuss the challenges of implementing programmable interfaces in microprocessor systems.
7. a) Discuss the significance of input/output organization in computer systems. How do parallel and serial interfaces impact system performance?
b) Define the IEEE 488 standard and its application in parallel communication.