

FACULTY OF ENGINEERING

B.E. (IT) IV - Semester (AICTE) (Backlog) (New) Examination, February/March 2024

Subject: Computer Organisation and Microprocessor

Time: 3 Hours

Max. Marks: 70

Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each questions 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) What is a Micro Computer? Give an example of a Micro Computer.~~
~~b) Why Cache memory is used?~~
c) Calculate the equivalent gray Code for 1001.
~~d) Explain about 8085 Flag Registers.~~
~~e) List out conditional call instructions.~~
~~f) What is I/O Interfacing?~~
~~g) What is the difference between synchronous and asynchronous bus operations?~~
2. ~~a) Distinguish between Memory mapped I/O and Program Controlled I/O.~~
~~b) How do you calculate CPU performance? Suppose the Main Memory Access time is 1000ns, the Cache Memory time is 100ns, and No of Hits 75 out of 100 requests. Calculate CPU performance or Average Access time.~~
3. ~~a) Draw the architecture of the 8085 Microprocessor with a neat sketch diagram.~~
~~b) Differentiate between zero address, one address, two address and three address instructions~~
4. a) What is an Interrupt? Explain 8085 Interrupts in detail.
b) Differentiate between SIM and RIM instructions with suitable examples.
5. ~~a) What is DMA? Explain the modes of the DMA Controller.~~
~~b) Explain the difference between Stack and Subroutine.~~
6. a) Explain the block diagram of the 8279 programmable Keyboard.
b) Explain the operational modes of the 8255A Programmable I/O device.
7. a) Draw the timing diagram of the T state, machine cycle, and instruction cycle.
b) Describe the interfacing of DAC with 8085 Microprocessor.