

FACULTY OF ENGINEERING

Code No.15089/AICTE

68

B.E. (IT) IV-Semester (AICTE)(Main&Backlog)Examination, October 2021

Subject: Computer Organization and Microprocessor

Time: 2 hours

Max. Marks: 70

Note: Missing data, if any, may be suitably assumed.

PART - A

Answer any five questions.

(5x2 = 10 Marks)

- 1 Draw the timing diagram for fetch phase in instruction cycle.
- 2 Write about types of interrupts.
- 3 Compute the average access time with cache access time of 100ns and main memory access times is 1000ns. The hit ratio is 0.8.
- 4 Write the difference between logical address space and physical address space.
- 5 List the various 8085 instructions to perform arithmetic and logical operations and write the function of each instruction.
- 6 How many number of the times the instruction sequence in the loop will execute? Justify?
MOV AL, 00h
A1: INC AL
JNZ A1
- 7 State the function of following pins of DMA controller 8257.
i) HLDA ii) HRQ
- 8 Write a 20ms time delay subroutine using register pair BC, clear the Z flag without affecting any other flags in the flag register.
- 9 Write the any two mode operations of 8253/8254 Programmable Interval Timer.
- 10 Define slew rate and line impedance? What is slew rate and line impedance values of RS232?

PART - B

Answer any four questions.

(4x15 = 60 Marks)

- 11 a) Explain the process of instruction cycle with interrupts with the help of state diagram.
b) Write the various data transfer modes using Direct memory access.
- 12 a) Write and explain the types of memory-reference instructions with example for each.
b) Explain the organization of Associative memory.
- 13 a) Write an assembly language to find the 3-bit binary numbers.
b) Draw the 8085 timing diagram for execution of IN instruction.
- 14 a) What are the major components of the 8259A interrupt controller and functions of each component. Explain each component in detail.
b) What are the various modes and its function in 8257. Explain with the help of 8257 block diagram.

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- 15 a) Describe the function of 8253 with the help of block diagram.
b) Explain various programming modes of 8251 with the help of functional block diagram.
- 16 a) Write a short note on RS-232-C. Give its applications.
b) Explain the internal architecture of 8085 with a neat block diagram and explain its working.
- 17 a) Describe how the virtual memory is organized by means of block diagram.
b) Write short notes on subroutines in 8085.

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