Code No: 134AK **R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year II Semester Examinations, September/October - 2023
COMPUTER ORGANIZATION
(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A
(25 Marks)

1.a)	What is an instruction cycle?	[2]
b)	Define the terms: Computer Architectures, Computer Organization and Computer Design.	[3]
c)	What is the purpose of Program Counter, Stack Pointers registers?	[2]
d)	With example, discuss briefly about Immediate and indirect addressing modes.	[3]
e)	What is the role of Interrupt Service Routine (ISR)?	[2]
f)	Write a simple macro for calculating multiplication of two data values.	[3]
g)	Write down the differences between I/O mapped and memory mapped I/O.	[2]
h)	Enumerate the steps in adding two 8- bit numbers.	[3]
i)	What is the need for parallel processing?	[2]
j)	What is Cache memory? Why is it required?	[3]

PART – B
(50 Marks)

2.a) List and explain various memory reference instructions.
b) What is Address sequencing? Explain the design and functionality of a micro program sequencer. [5+5]

OR

3.a) Explain the functionality of the key components of a computer system.
b) Explain about control memory. [5+5]

4. Draw the internal structure of 8086 register organization and explain various registers and their functions in detail. [10]

OR

5. Explain various addressing mode of 8086 in detail with relevant examples. [10]

6.a) Write an assembly language program to add two, 8-bit numbers.
b) Explain the interrupt cycle of 8086. [5+5]

OR

7. What is an assembler? Explain the structure of an assembly language program taking an example code of your own? [10]

8. Explain floating point multiplication algorithm in detail. [10]

OR

9. Explain the operation of an IOP. [10]

10. Explain about vector processing in detail. [10]

OR

11. Explain about Arithmetic pipeline of instructions. [10]

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