H.T No

Regulations: A18

(An Autonomous Institution)

**Code No: 7D408** **Date: 04-Aug-2023 (FN)**

**B.Tech II-Year II- Semester External Examination, Aug - 2023 (Supplementary)**
**COMPUTER ORGANIZATION (CSE and IT)**

**Time: 3 Hours** **Max.Marks:70**

***Note:*** *a) No additional answer sheets will be provided.*
*b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.*
*c) Missing data can be assumed suitably.*

**Bloom's Cognitive Levels of Learning (BCLL)**

| | | | | | |
|---|---|---|---|---|---|
| Remember | L1 | Apply | L3 | Evaluate | L5 |
| Understand | L2 | Analyze | L4 | Create | L6 |

## Part - A Max.Marks:20
## ANSWER ALL QUESTIONS

| | | BCLL | CO(s) | Marks |
|---|---|---|---|---|
| 1 | Give short notes on system software. | L2 | CO1 | [2M] |
| 2 | What is a micro program sequencer? | L1 | CO2 | [2M] |
| 3 | What is BCD Adder? | L1 | CO3 | [2M] |
| 4 | Define a microprocessor. | L2 | CO4 | [2M] |
| 5 | What are assembler directives? | L1 | CO5 | [2M] |
| 6 | Draw and discuss the Interrupt structure of 8086. | L2 | CO6 | [2M] |
| 7 | Define clock rate. | L1 | CO1 | [2M] |
| 8 | What is half adder? | L2 | CO3 | [2M] |
| 9 | Write and explain machine code for instruction MOV DL, [BX] | L3 | CO6 | [2M] |
| 10 | Differentiate between short, near and far jump instructions with two examples of each. | L3 | CO4 | [2M] |

## Part – B Max.Marks:50
## ANSWER ANY FIVE QUESTIONS. EACH QUESTION CARRIES 10 MARKS.

| | | | BCLL | CO(s) | Marks |
|---|---|---|---|---|---|
| 11. | a) | Explain the different functional units of a computer. | L6 | CO1 | [5M] |
| | b) | Differentiate between fixed point and floating point representation. | L4 | CO1 | [5M] |
| 12. | a) | Explain the design of micro-programmed control unit in detail. | L1 | CO2 | [5M] |
| | b) | Explain about shift micro operation. | L2 | CO2 | [5M] |
| 13. | a) | What is control memory explain with address sequence? | L1 | CO3 | [5M] |
| | b) | Write the differences between hard wired control and micro programmed control | L4 | CO3 | [5M] |
| 14. | a) | Explain in detail with a neat figure the working of the internal architecture of the 8086MP. | L2 | CO4 | [5M] |
| | b) | Briefly explain various multipurpose registers in 8086. | L1 | CO4 | [5M] |
| 15. | a) | Explain all assembler directives of 8086 with examples. | L6 | CO5 | [5M] |
| | b) | How to evaluate arithmetic expressions? Explain. | L3 | CO5 | [5M] |

| | | | | | |
|---|---|---|---|---|---|
| 16. | a) | With format explain rotate instructions. Give examples to rotate right by 1-bit and rotate Left by 5-bits. | L3 | CO6 | [5M] |
| | b) | What are the sources of interrupts? Briefly explain the steps taken by a processor to execute an interrupt instruction. | L2 | CO6 | [5M] |
| 17. | a) | Perform the arithmetic operations in binary using 2's complement representation<br>(i) (+47)+(-13) (ii) (-47)-(-13) | L3 | CO1 | [5M] |
| | b) | Convert the following numbers with the indicated bases to decimal number<br>(i) $(12131)_{16}$ (ii) $(4312)_{8}$ | L2 | CO2 | [5M] |
| 18. | a) | Write and explain machine code for instruction MOV DL, [BX] | L3 | CO4 | [4M] |
| | b) | Briefly explain various multipurpose registers in 8086. | L1 | CO5 | [3M] |
| | c) | Explain command word format of 82C55 in mode-0. Write the control word format to initialize to set PC3 and reset PC7. | L3 | CO6 | [3M] |

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