**Code No.PC303CS**

**METHODIST COLLEGE OF ENGINEERING & TECHNOLOGY (An Autonomous Institution)**

**B.E. (CSE/AI&DS) III-Semester (AICTE) (Regular) Examination, Feb -2023**

**Subject: COMPUTER ORGANIZATION AND MICROPROCESSOR**

**Time: 3 hours Max.Marks:60**

**Note: Missing data, if any, maybe suitably assumed.**

**PART-A**

**Answer All the questions.**

|  |  |  |  |  |
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| Q.No. | Questions | Marks | CO | BTL |
| 1. a | What are zero address instructions? | 2 | 1 | 1 |
| b | What is meant by end of program? | 2 | 1 | 2 |
| c | Define pipelining. | 2 | 2 | 1 |
| d | Explain the purpose of Segment Register. | 2 | 2 | 2 |
| e | What is the need of assembler directives? Give two examples. | 2 | 3 | 2 |
| f | What is the use of Branch Instruction. | 2 | 3 | 2 |
| g | Give the need of I/O interface module. | 2 | 4 | 2 |
| h | What is DMA? Write its Advantages? | 2 | 4 | 2 |
| i | Explain the memory hierarchy. | 2 | 5 | 2 |
| j | Define Hit ratio and Miss ratio. | 2 | 5 | 1 |

**PTO**

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**PART-B**

**Answer Any Five questions**.

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| Q.No. |  | Questions | Marks | CO | BTL |
| 2. | a | Draw the functional diagram of a computer and explain each block. | 4 | 1 | 3 |
| b | Explain the types of Interrupts. | 4 | 1 | 2 |
| 3. | a | Explain different segments registers in 8086?  | 4 | 2 | 2 |
| b | Describe the addressing modes of 8086 microprocessor each with an example. | 4 | 2 | 3 |
| 4. | a | Explain any four assembler directives used in 8086 microprocessor. | 4 | 3 | 3 |
| b | Explain machine language instruction formats of 8086. | 4 | 3 | 3 |
| 5. | a | Explain the method of DMA transfer.  | 4 | 4 | 2 |
| b | Discuss the following with respect to asynchronous data transfer. a) Strobe control b)Handshaking  | 4 | 4 | 3 |
| 6. | a | Explain about the set associative mapping. | 4 | 5 | 2 |
| b | What is cache memory? Explain the different mapping functions. | 4 | 5 | 3 |
| 7. | a | List and explain the steps involved in the execution of a complete instruction. | 4 | 1 | 3 |
| b | Explain the flag register of 8086. | 4 | 2 | 2 |
| 8. | a | Explain the role of stack in calling a subroutine and returning from the routine. | 4 | 3 | 3 |
| b | Differentiate between Memory Mapped I/O and Isolated I/O. | 4 | 4 | 4 |
| 9. | a | Analyze the memory hierarchy in terms of speed, size and Cost. | 4 | 5 | 4 |
| b | Explain clearly the three types of CPU organizations with examples. | 4 | 1 | 2 |

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