**Code No. PC303CS**

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

**B.E. (CSE/AI&DS) III-Semester (AICTE) (Supplementary) Examination, August -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.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Q.No. | Questions | Marks | CO | BTL |
| 1. a | Explain how to access I/O devices in a system. | 2 | 1 | 2 |
| b | What is interrupt service routine? | 2 | 1 | 1 |
| c | What is the purpose of ALE signal in 8086? | 2 | 2 | 2 |
| d | List general purpose registers of 8086. | 2 | 2 | 2 |
| e | What is the need of assembler directives? Give two examples. | 2 | 3 | 2 |
| f | Write the purpose of Call Instruction. | 2 | 3 | 2 |
| g | What are different Modes of transfer. | 2 | 4 | 2 |
| h | List few Asynchronous data transfer techniques.  | 2 | 4 | 1 |
| i | Define page fault and page replacement? | 2 | 5 | 1 |
| j | What is the principle of virtual memory. | 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 | Explain the functional units of basic computer. | 4 | 1 | 2 |
| b | What do you mean by Addressing modes? Explain the following addressing modes: i) Index Addressing mode ii) Immediate Addressing mode. | 4 | 1 | 3 |
| 3. | a | Draw the pin diagram of 8086 and explain the function of each pin in detail. | 4 | 2 | 3 |
| b | Draw the Register organization of 8086 Microprocessor and explain the operation of each register in detail. | 4 | 2 | 3 |
| 4. | a | Write an assembly language program to find the largest number of an array 8- bit array. | 4 | 3 | 5 |
| b | Explain the programming development steps in 8086 microprocessor. | 4 | 3 | 3 |
| 5. | a | Explain the following with respect to asynchronous data transfer.a) Asynchronous serial transfer b) Asynchronous communication Interface. | 4 | 4 | 3 |
| b | Explain different modes of I/O transfer. | 4 | 4 | 2 |
| 6. | a | Explain about the direct mapping. | 4 | 5 | 2 |
| b | Explain the relation between address and memory space in a virtual memory systems. | 4 | 5 | 4 |
| 7. | a | What is instruction format? Discuss various types in detail. | 4 | 1 | 2 |
| b | Discuss the concept of Pipelining. | 4 | 2 | 2 |
| 8. | a | Give the assembly language implementation for jump instruction for the the following: i)FORLOOP ii) IF-THEN-ELSE  | 4 | 3 | 3 |
| b | Explain about DMA. | 4 | 4 | 2 |
| 9. | a | Explain about the segmented page mapping. | 4 | 5 | 3 |
| b | Explain the instruction cycle with help of a flow chart. | 4 | 1 | 3 |

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