Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **17EC2056** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MICROPROCESSOR AND INTERFACING TECHNIQUES** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | | With neat sketch, explain the architecture of 8085 microprocessor. | CO1 | 10 |
| b. | | Write the Arithmetic and Logical operations in 8085 microprocessor with suitable mnemonics. | CO1 | 10 |
| **(OR)** | | | | | |
| 2. | a. | | Describe the timing diagram for the execution of MVI B, 45H stored in location 5200. | CO1 | 8 |
| b. | | Consider the operating frequency of 8085 is 2MHz. Calculate how much time needed for the execution of following instructions  (i) ADI 76h (ii) MVI A, 12h  (iii) ADD C (iv) MOV A,B | CO1 | 4 |
| c. | | Write an Assembly language program in 8085 to add two 8 bit numbers. | CO1 | 8 |
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| 3. | a. | | With neat sketch, explain the architecture of 8086 microprocessor. | CO2 | 10 |
| b. | | Describe the Shift operations in 8086 microprocessor with suitable examples. | CO3 | 10 |
| **(OR)** | | | | | |
| 4. | a. | | Identify the 8086 addressing modes in the following instructions.  (i) MOV AL, BL (ii) MOV AX, 124CH (iii) MOV [DI], AX  (iv) MOV DI, [SI]+1234H (v) MOV [BX] + 04000H , AH | CO2 | 5 |
| b. | | Write an assembly language program for the following using 8086:  (i) Sum of N numbers.  (ii) move a block of data from 1000 H to 2000H address location | CO3 | 10 |
| c. | | List the signals that are common to both maximum mode and minimum mode interface signals. | CO2 | 5 |
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| 5. | a. | | Illustrate and explain the control word format of 8255 along with its operating modes. | CO4 | 10 |
| b. | | Explain the internal architecture of 8253 and list all the operating modes of 8253 counters with necessary figures. | CO4 | 10 |
| **(OR)** | | | | | |
| 6. | a. | | Draw and explain the block diagram of 8251-programmable communication interface. | CO4 | 10 |
| b. | | List the major components of the 8259 interrupt controller and explain their functions. | CO4 | 10 |
| 7. | a. | Explain how 8237 DMA controller transfers 64K bytes of data through all four channels. | | CO4 | 10 |
| b. | Differentiate between serial and parallel printers. Explain 8295 printer interface with input data and output status register. | | CO6 | 10 |
| **(OR)** | | | | | |
| 8. | a. | | Sketch the block diagram of 8275 CRT display controller with all functional blocks. | CO6 | 10 |
| b. | | Write an 8086 assembly language program to generate a triangle waveform for any fixed delay. The sequence should repeat.   |  |  | | --- | --- | | **Port** | **Address** | | DAC1  DAC2 | C0  C8 | | CO5 | 10 |
|  | | | **Compulsory**: |  |  |
| 9. | a. | | Explain the following functions of 8279:   1. Scan Section. 2. Keyboard Section. 3. Display Section. | CO5 | 15 |
| b. | | Write short notes on Stepper Motor. | CO6 | 5 |