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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – April/May – 2017**

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| **Code :** | **14EC2009** | **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. | | Explain the internal architecture of 8085 microprocessor with neat block diagram. | CO1 | 15 |
| b. | | Identify the addressing modes of 8085 for the following instructions.   1. LDAX B 2. MOV B,A 3. LXI H, 4614 4. HLT 5. STA 41FF | CO1 | 5 |
| (OR) | | | | | |
| 2. | a. | | Sketch the timing diagram for the 8085 instruction LDA 5000 stored in the memory location 4100. | CO1 | 15 |
| b. | | Write an Assembly language program in 8085 to multiply two 8 bit numbers. | CO1 | 5 |
| 3. | a. | | Design a memory system for the 8085 microprocessor such that it should contain 16 Kbyte of EPROM and 8 Kbyte of RAM and give the address map. | CO3 | 15 |
|  | b. | | Write 8085 instructions to transfer the content 93H to accumulator and B7H to B register and to add both the contents. Also indicate the status of sign flag, carry flag and zero flag after addition is performed. | CO1 | 5 |
| (OR) | | | | | |
| 4. | a. | | Design a system for the 8085 microprocessor to connect 4 LEDs and 4 switches. | CO3 | 15 |
|  | b. | | Write an 8085 program to find whether the given number is odd or even. If it is odd store FFH in location 4600 else store AAH in location 4601. | CO1 | 5 |
| 5. | a. | | Sketch the block diagram of 8255 Programmable peripheral Interface and explain each block in detail | CO3 | 12 |
|  | b. | | Write 8085 instructions to generate a rectangular waveform interfacing with 8255. The I/O addresses are as follows:  Control register: 43  Port A : 40  Port B : 41  Port C : 42 | CO3 | 8 |
| (OR) | | | | | |
| 6. | a. | | Illustrate how 8251 is used as programmable communication interface with neat block diagram. | CO3 | 15 |
|  | b. | | Write 8085 instructions to generate a pulse every 100µs from counter 0 of 8253 if the clock frequency of 8253 is 4MHz. | CO3 | 5 |
| 7 | a. | | Illustrate and explain how an 8x8 matrix keyboard can be interfaced to 8085 through 8279 programmable keyboard display interface with the neat block diagram. | CO3 | 20 |
| (OR) | | | | | |
| 8. | a. | Discuss the operations of bus interface unit and give the importance of instruction queue register. Justify why 8086 is faster than 8085. | | CO2 | 15 |
|  | b. | Write short notes on Pentium processor. | | CO3 | 5 |
|  | | **Compulsory**: | |  |  |
| 9. | a. | How 8086 microprocessor is capable of handling 1MB memory using memory segmentation. | | CO2 | 8 |
|  | b. | (i) The contents of the following registers are: CS = 1111H ; DS = 3333H SS = 2526H; IP = 1232H ; SP = 1100H ; DI = 0020H.  Calculate the corresponding physical addresses for the address bytes in CS, DS and SS. | | CO2 | 8 |
| (ii) Transfer a set of 5 strings from memory location 2000 to other memory location 3000 using 8086 programming. | | CO2 | 4 |

ALL THE BEST