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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

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

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12MT217** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Microprocessor and Microcontrollers** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** | |
| **PART-A(10X1=10 MARKS)** | | | |
| 1. | What is the size of address and data bus in 8085 microprocessor? | | (1) |
| 2. | How many address lines are needed to interface a 32K ROM with 8085? | | (1) |
| 3. | Which bit of the control word of 8255 differentiates BSR and I/O mode. | | (1) |
| 4. | Expand USART. | | (1) |
| 5. | What is the difference between timer and counter? | | (1) |
| 6. | Which port of 8051 has no alternate function? | | (1) |
| 7. | List the different types of JUMP Instruction of 8051. | | (1) |
| 8. | Find the time taken by 8051 to execute the following instruction if its frequency is 12 MHz  ADD A,R1 | | (1) |
| 9. | Differentiate CISC and RISC architecture. | | (1) |
| 10. | What is ARM Stand for? | | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Specify the addressing modes for the following instructions of 8085.   1. LDAX B 2. MVI A, 05H 3. CMC | (3) |
| 12. | Frame the mode word for 8251 for the following parameters  a) Baud Rate factor: ASYN X 16  b) Character length is seven bits and two stop bits.  c) No parity check is used | (3) |
| 13. | Draw the format of Program Status Word (PSW) of 8051. | (3) |
| 14. | With 8051 Instructions, write a program to unpack the number 56h in the memory location 4000h.Store the answers in 4001h and 4002h. | (3) |
| 15. | Mention the various operational modes of ARM Processor. | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | With neat sketch, explain the architecture of 8085 microprocessor. | (15) |
| (OR) | | | |
| 17. | a. | Interface an 8 KB RAM with 8085 and give the address map. | (8) |
| b. | Draw the timing diagram for the instruction MVI B, 45H stored in location 5200. | (7) |
| 18. |  | Draw and explain the block diagram of 8255-programmable peripheral interface. | (15) |
| (OR) | | | |
| 19. | a. | With neat block diagram, Illustrate how a matrix keyboard and display can be interfaced with the microprocessor using keyboard display interface controller 8279. | (15) |
| 20. | a. | Draw the block diagram of 8051 and explain each block in detail. | (15) |
| (OR) | | | |
| 21. | a. | Draw and explain the operation of timer/counter control logic of 8051. | (7) |
| b. | Explain the mode 1 operation of serial port of 8051. | (8) |
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| 22. | a. | Analyze the program  MOV A,#F0h  MOV R0,#70h  ANL A,R0  MOV 15h,A  CPL A  ORL 15h,#88h  Give the final answer in 15h and A. | (10) |
| b. | Explain the sequence of events take place after the CALL instruction is executed.  LCALL 4000 | (5) |
| (OR) | | | |
| 23. | a. | Analyze the program  MOV A,#E7h  RR A  RR A  RR A  RR A  SWAP A  CLR C  RRC A  RRC A  Find the value in A. | (10) |
| b. | Write an 8051 program that finds the number of 1s in a given byte. | (5) |
| 24. |  | With examples explain various instruction sets in ARM. | (15) |
| (OR) | | | |
| 25. |  | With neat diagram, explain the architecture of ARM processor. | (15) |

ALL THE BEST