

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Fifth Semester B.Tech Degree Regular and Supplementary Examination December 2020

Course Code: EE309**Course Name: MICROPROCESSOR AND EMBEDDED SYSTEMS**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 5 marks.*

Marks

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| 1 | Discuss the addressing modes of 8085 microprocessor with an example for each. | (5) |
| 2 | Sketch the timing diagram of LDA 4500 | (5) |
| 3 | Explain the control word register of 8255 | (5) |
| 4 | Compare hard and soft real time systems | (5) |
| 5 | List any five logical instruction of 8051 | (5) |
| 6 | Explain the multifunction of Port 3 of 8051 | (5) |
| 7 | Explain the data types and directives of 8051 | (5) |
| 8 | What is simplex, half duplex and full duplex in serial communication | (5) |

PART B*Answer any two full questions, each carries 10 marks.*

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| 9 | a) Write a program to convert a packed BCD number stored in location 2200 to binary and store in location 2230 | (5) |
| | b) Explain CALL and RETURN instructions | (5) |
| 10 | a) Describe the following 8085 instructions (i) DAD Rp (ii) CMP M | (5) |
| | b) Write a delay subroutine using register pair | (5) |
| 11 | a) Explain in detail the different flags of 8085 | (5) |
| | b) Discuss instruction cycle, machine cycle and T state of 8085 | (5) |

PART C*Answer any two full questions, each carries 10 marks.*

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| 12 | a) Write a short note on different interrupts in 8085 | (5) |
| | b) List any five application domain of embedded system | (5) |
| 13 | a) Design an interfacing circuit for one 4K x 8 RAM and one 4K x 8 EPROM with 8085 microprocessor and find the memory address range | (5) |
| | b) Explain the BSR operation of 8255 PPI | (5) |

- 14 a) Show the interfacing of LED with 8085 using 8255 PPI and write a program to continuously turn ON and OFF with a duty ratio of 0.5 (7)
- b) Differentiate between assembler and compiler (3)

PART D

Answer any two full questions, each carries 10 marks.

- 15 a) Explain MOV, MOVX and MOVC (5)
- b) Explain the various modes of operation of Timer of 8051 (5)
- 16 a) Explain the register banks of 8051 (4)
- b) Write an ALP in 8051 to multiply two numbers and store the result in external memory locations 4500 and 4501. (6)
- 17 a) Draw the internal architecture of 8051 microcontroller (4)
- b) Write a program for a counter to find the frequency of the signal connected to P3.4 (6)
