

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018

Course Code: EE309

Course Name: MICROPROCESSOR AND EMBEDDED SYSTEMS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.

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|---|---|-------|
| 1 | Explain the following pins in 8085 Microprocessor.
i) HOLD ii) READY iii) TRAP iv) ALE | (5) |
| 2 | Explain how delay is generated using one register and calculate how much delay can be generated if one register is loaded with maximum count. Assume time for one state is 320ns. | (5) |
| 3 | Explain the interrupts in 8085 Microprocessor. | (5) |
| 4 | Give comparison between Microprocessors and Microcontrollers. | (5) |
| 5 | Explain the following instructions used in 8051 microcontroller.
i) MOV R ₁ , #05 _H ii) ADD A, #01 _H iii) MOV R ₂ , 07 _H iv) DJNZ R ₂ , loop | (5) |
| 6 | Explain with neat diagram the RAM of 8051. | (5) |
| 7 | Explain the Data types and Directives of 8051 Microcontroller. | (5) |
| 8 | Write a program to create a square wave of 50% duty cycle on the P1.5 bit .
Timer 0 is used to generate the time delay. | (5) |

PART B

Answer any two full questions, each carries 10 marks.

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| 9 | a) Write an ALP in 8085 to find the smallest number in an array | (5) |
| | b) Draw the timing diagram for Memory Read operation. | (5) |
| 10 | Explain with neat block diagram the architecture of Intel 8085 Microprocessor. | (10) |
| 11 | a) Explain CALL & RETURN instructions in 8085. | (5) |
| | b) Explain Machine Cycle and Instruction Cycle | (5) |

PART C

Answer any two full questions, each carries 10 marks.

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| 12 | a) Explain with suitable diagram, how an ADC can be interfaced with 8085 Microprocessor. | (6) |
| | b) Explain Software and Hardware interrupts in 8085 Microprocessor. | (4) |

- 13 a) Draw an Interface circuit of 2048 x 8 bit RAM with 8085 using NAND Gate. (5)
b) Explain general characteristics of Embedded system. (5)
- 14 a) Explain i) Compiler ii) Assembler iii) Linker iv) Loaders. (8)
b) What are the demerits of Waterfall Model? (2)

PART D

Answer any two full questions, each carries 10 marks.

- 15 Explain with neat block diagram the architecture of 8051 Microcontroller. (10)
- 16 a) Explain SFR registers in 8051 microcontroller. (5)
b) Explain TMOD and TCON registers of 8051 Microcontroller. (5)
- 17 Write an ALP in 8051 to add two 32 bit numbers & store the result. (10)
