

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2017

Course Code: EE309

Course Name: MICROPROCESSOR AND EMBEDDED SYSTEMS (EE)

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.

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|---|---|-------|
| 1 | Explain demultiplexing of Address/Data Bus. | (5) |
| 2 | Write a delay subroutine program in 8085 for 0.4 ms. Assume the clock frequency as 3 MHz. | (5) |
| 3 | Differentiate between maskable and non-maskable interrupts and list the interrupt related instructions. | (5) |
| 4 | Difference between Microprocessor and Microcontroller. | (5) |
| 5 | Write an ALP using 8051 to generate a square wave of 50% duty cycle. | (5) |
| 6 | Explain SFR's of 8051. | (5) |
| 7 | Explain Assembler Directives of 8051. | (5) |
| 8 | Explain the function of TMOD and TCON registers of 8051 Microcontroller. | (5) |

PART B

Answer any two full questions, each carries 10 marks.

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|-------|---|------|
| 9 | Explain the architecture of 8085 microprocessor with the help of a neat functional block diagram. | (10) |
| 10 | Draw and explain the timing diagram of LDAX D. | (10) |
| 11 a) | Explain different addressing modes in 8085 with examples. | (6) |
| b) | Explain the terms Machine cycle and T-states. | (4) |

PART C

Answer any two full questions, each carries 10 marks.

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|-------|---|-----|
| 12 a) | Draw the interrupt structure of 8085. | (5) |
| b) | Design memory systems to interface 2K ROM and 2K RAM using 2K x 8 bit memory chips. | (5) |
| 13 a) | Give the current trends and challenges in the field of Embedded Systems. | (5) |
| b) | Describe the Embedded System product development model. | (5) |
| 14 a) | Explain Assembler, Compiler, Linker and Loader. | (5) |
| b) | Draw the block diagram of 8255. | (5) |

PART D

Answer any two full questions, each carries 10 marks.

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|-------|---|------|
| 15 | With neat block diagram, explain the architecture of 8051. | (10) |
| 16 a) | Explain the addressing modes of 8051 with examples. | (6) |
| b) | Explain how serial port programming is done in 8051. | (4) |
| 17 | Show how an LCD can be interfaced with 8051 and also write a program to send 'Y', 'E', 'S' to LCD continuously. | (10) |
