

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: EC305

Course Name: MICROPROCESSOR & MICROCONTROLLER

Max. Marks: 100

Duration: 3 Hours

PART A

Answer any two full questions, each carries 15 marks.

- | | Marks |
|---|-------|
| 1 a) List the functional blocks of a microprocessor. Explain each block. | (7) |
| b) Illustrate a typical microprocessor based system. Explain each block. | (8) |
| 2 a) What are the main features of fourth generation microprocessors? Give any three examples. | (7) |
| b) Define the function of the following signals of 8085 microprocessor. | (8) |
| i) $\overline{IO/\overline{M}}$ | |
| ii) ALE | |
| iii) $\overline{\text{RESET IN}}$ | |
| iv) SID | |
| 3 a) What are the different addressing modes used in 8085? Explain the instruction STAX rp. What is the addressing mode used in this instruction? | (7) |
| b) List the different modes of operation of 8255 PPI. | (8) |

PART B

Answer any two full questions, each carries 15 marks.

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| 4 a) List the flags used in 8086 microprocessor and explain their functions. | (8) |
| b) What is a segment register? List the segment registers in 8086. | (7) |
| 5 a) Broadly classify instruction set of 8051. Give 2 examples for each class. | (10) |
| b) Compare programmed input output data transfer with interrupt driven input output data transfer. | (5) |
| 6 a) List the special function registers in 8051 microcontroller. | (8) |
| b) Compare a microcontroller with a microprocessor in terms of architectural features. | (7) |

PART C

Answer any two full questions, each carries 20 marks.

- 7 a) What is an interrupt? What are the types of interrupts in 8051? Explain interrupt structure of 8051. (10)
- b) What function is performed by Interrupt Enable (IE) register and Interrupt Priority (IP) register in 8051? (5)
- c) How will you blink an LED using timer interrupt? (5)
- 8 a) How will you generate a 1 ms delay using 8051? (5)
- b) How a triangular waveform can be generated using 8051? (10)
- c) What is a stepper motor? How will you interface 8051 to a stepper motor? (5)
- 9 a) What are the advantages of serial data communication? What are its drawbacks? (5)
- b) How will you use 8051 for serial data communication?. (5)
- c) How will you read an analog voltage and display it on LCD using 8051? (10)
