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| **Scheme of Valuation/Answer Key**  (Scheme of evaluation (marks in brackets) and answers of problems/key) |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  **V SEMESTER B.TECH DEGREE EXAMINATION, DEC 2018** |

**Course Code: EC305**

**Course Name: MICROPROCESSOR & MICROCONTROLLER**

**Max. Marks: 100 Duration: 3 Hours**

Scheme of valuation

**Part A**

1 a) List the functional blocks of a microprocessor (3)

Explanation (4)

b) Microprocessor based system- Block diagram + explanation (4 + 4)

2 a) Main features of fourth generation microprocessors (4)

Three examples. (3)

b) Function of the given signals of 8085 microprocessor. (2 x 4)

3 a) Different addressing modes used in 8085 (4)

Explain the instruction STAX rp. (2)

Addressing mode used in this instruction? (1)

b) Dia + Explanation- 4+4

**PART B**

4 a) Flags used in 8086 microprocessor + functions. (3 +5)

b) Segment register (3)

List the segment registers in 8086. (4)

5 a) Instruction set of 8051 (5)

2 examples for each class. (5)

b) Comparison (5)

6 a) Special function registers in 8051 microcontroller with explanation. (4+4)

b) Comparison. (7)

**PART C**

7 a) Interrupt(2)

Types of interrupts in 8051(3)

Interrupt structure of 8051. (5)

b) Functionperformed by Interrupt Enable (IE) register and Interrupt Priority (IP) register in 8051 (3+2)

c) Program + Explanation to blink an LED using timer interrupt (5)

8 a) Program to generate a 1 ms delay using 8051 (5)

b) Program to generate triangular waveform using 8051 + Explanation (5 + 5)

c) Stepper motor (1)

Interfacing 8051 to a stepper motor (4)

9 a) Advantages of serial data communication (3)

Drawbacks (2)

b) 8051 for serial data communication - explanation (5)

c) To read an analog voltage and display it on LCD using 8051 – Explanation + Program – (5 + 5)