4E1220

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B. Tech. IV-Sem. (Main) May 2019
PCC Electronics & Comm. Engg.
4EC4-05 Microcontrollers
EC, EI

Time: 3 Hours **Maximum Marks: 120**

Instructions to Candidates:

Attempt all ten questions from Part A, five questions out of seven questions from Part B and four questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL 2. NIL

PART – A

(Answer should be given up to 25 words only) **[10×2=20]**

All questions are compulsory

Q.1 How many different buses are used 8085 microprocessor?

Q.2 How many hardware interrupts are used in 8085 microprocessor?

Q.3 Explain the LXI Rp, 16 bit data and DAA instructions.

Q.4 What is the use of ALE pin?

Q.5 Why AD_0 - AD_7 line are multiplexed?

Q.6 Why cache memory is required?

Q.7 How many chips are required to make 2 kB of memory with the help of 256 × 4 bit memory chip?

Q.8 What are Maskable and Non-Maskable interrupt?

Q.9 Write and explain in short one application of 8051 microcontroller and 8085 microprocessor each.

Q.10 Give names of addressing modes of 8085 microprocessors.

PART – B

(Analytical/Problem solving questions) **[5×8=40]**

Attempt any five questions

Q.1 Draw the architecture diagram of 8085 microprocessor.

Q.2 Draw the PIN diagram of 8051 microcontroller and explain the following PINS-

(i) External enable

(ii) PSEN

(iii) Read strobe ($\overline{RD}$)

Q.3 Write the program to add two 16 bit numbers with carry.

Q.4 Write a program to find out the largest number among the array of five numbers.

Q.5 Give the classification of interrupts and explain for 8085 microprocessors.

Q.6 Explain the concept of D/A converter.

Q.7 What is the timer in 8085 microprocessor?

PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) [4×15=60]

Attempt any four questions

Q.1 Explain the DMA 8257 controller in detail.

Q.2 How instruction sets are classified in 8085 microprocessor? Explain with example of each classification.

Q.3 Discuss in detail RISC architecture.

Q.4 Write a program to find out the factorial of four in 8085 microprocessor.

Q.5 Explain ARM microcontroller interface design.
