USN | | | | | | | | | | **10MA55**

Applied Electronics and Microprocessors

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1 a. Explain the basic concepts of a 3-bit D/A converter with a neat block diagram and digital input versus analog output graph. **(10 Marks)**
   b. With a neat block diagram, explain the construction and working of successive approximation A/D converter. **(10 Marks)**

2 a. Briefly explain the different types (any three) of semiconductor memory. **(06 Marks)**
   b. Enlist the features commonly examined while selecting a specific memory chip. **(04 Marks)**
   c. Illustrate 'liquid crystal display'. Also, mention its applications. **(10 Marks)**

3 a. With a neat figure and waveform, explain the principle of chopper. **(06 Marks)**
   b. With a neat block diagram, explain the speed control of DC motor by armature voltage control method. **(14 Marks)**

4 a. Draw the functional organization of the Intel 8085 microprocessor and briefly explain its registers. **(12 Marks)**
   b. Discuss the following addressing modes, available with Intel 8085 microprocessor, with examples:
      i) Direct addressing mode
      ii) Register addressing mode **(08 Marks)**

PART – B

5 a. Discuss any four assembler directives available with Intel 8085, with examples. **(12 Marks)**
   b. Write a program to perform arithmetic operation using addition and increment. **(08 Marks)**

6 a. Discuss the 8155 I/O timer loading format, and different modes of operation (any 2) along with the timer output. **(08 Marks)**
   b. With a neat block diagram of the 8279 keyboard and display interface, explain its four major sections. **(12 Marks)**

7 a. Sketch and explain typical stepper motor performance curves. **(10 Marks)**
   b. Briefly explain the salient questions (any 9), a designer may need to consider when choosing a motor for an application. **(09 Marks)**
   c. What is computer data acquisition? **(01 Marks)**

8 a. Sketch a block diagram to show the components of a typical full-features micro controller. **(10 Marks)**
   b. Illustrate PIC 16F84 pin-out and required external components. **(10 Marks)**

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