PVP 14

Code: EE6T3

III B.Tech - II Semester-Regular / Supplementary Examinations-March 2019

MICROCONTROLLERS AND APPLICATIONS
(ELECTRICAL & ELECTRONICS ENGINEERING)

Duration: 3 hours Max. Marks: 70

PART – A

Answer *all* the questions. All questions carry equal marks

11x 2 = 22 M

1.

a) List the different flag available in 8086.
b) Discuss the function of Execution interface unit in 8086.
c) Distinguish macros and procedures.
d) List the arithmetical instruction available in 8086.
e) Illustrate the function of TCON SFR in 8051.
f) List the data transfer instruction available in 8051.
g) List the interrupt sources in 8051.
h) Explain the difference in functionality of timer and counter.
i) Sketch the interfacing diagram of external memory with 8051.
j) Illustrate the function of RETI Instruction used for interrupt programming in 8051.
k) What is DMA?

PART – B

Answer any *THREE* questions. All questions carry equal marks.

3 x 16 = 48 M

2. a) Explain the register organization model in 8086 and illustrate with examples. 6 M

b) With the help of neat sketch, explain the timing diagram the read cycle for minimum mode configuration for 8086 microprocessor. 5 M

c) Describe the sequence of signals that occurs on the address bus, the control bus, and the data bus when 8086 fetches an instruction from memory. 5 M

3. a) Explain the following instruction with respect to 8086 microprocessor. 5 M

i) XLAT ii) PUSH

b) Explain the following assembler directive with examples.

i) EQU ii) ORG 5 M

c) Develop an assembly language program in 8086 to find the largest from an array of 100 numbers. 6 M

4. a) With the help of neat diagram explain the RAM organization of 8051. 6 M

b) Describe the different types of arithmetical instructions in 8051 with their Addressing modes. 5 M

c) Differentiate between ACALL and LCALL instruction of 8051 microcontroller and illustrate with examples. 5 M

5. a) Develop an ALP to generate delay of 1 ms using time 0 using mode 1 Configuration. 5 M

b) Develop an assembly language program in 8051 to convert a BCD number into binary number. 5 M

c) Design an serial transmitter to transmit 100 characters using 8051 with a baud rate of 4800 and write the necessary software programme. 6 M

6. a) Explain the block diagram of 8251 with the help of relevant diagram. 5 M

b) Interface 7 segment LEDs to display as a BCD counter. Sketch the interfacing diagram and write the relevant ALP. 5 M

c) Develop an interface circuit for ADC with 8051 microcontroller and write an ALP to read the sampled analog signal and store it in memory. 6 M