

Roll No

EI/IC-501

B.E. V Semester

Examination, December 2016

Microprocessor And Microcontroller

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

1. a) What is maximum memory addressing capability of 8086 microprocessor.
- b) List the internal registers in 8086 microprocessor. Give the purpose of segment registers in 8086 microprocessor.
- c) What are the differences between memory mapped I/O and I/O mapped I/O.
- d) What do you mean by pipelined architecture? How is it implemented in 8086 microprocessor?

OR

Discuss the salient features of 80286 processor.

2. a) What do you mean by Assembler?
- b) List the various addressing modes present in 8086.
- c) Give the differences between assembly and high level languages.
- d) Write an assembly language program for the addition of a series of 8-bit numbers. The series contain 16 numbers.

OR

- i) What is stack? Explain the use and operation of stack and stack pointer.

EI/IC-501

PTO

[2]

- ii) Write an assembly language program to create a delay of 100ms.

3. a) Write down the internal component generally found in programmable peripheral interfacing devices.
- b) What is the use of 8251 chip?
- c) Briefly, give the role of ADC and DAC in microprocessor based systems.
- d) What are the ports available in 8255? What is the advantages of Port C? How is 8255 configured if its control register contains 9Bh?

OR

Explain the DMA data transfer technique and mention its distinct advantage.

4. a) Differentiate between microprocessor and microcontroller.
- b) Name the five interrupt sources of 8051.
- c) Briefly, explain the I/O port structure of 8051 microcontroller.
- d) Explain the architecture of 8051 microcontroller with a block diagram.

OR

Explain following pins of 8051 microcontroller.

- i) RST
- ii) EA
- iii) ALE
- iv) PSEN
- v) XTAL1 and XTAL2

5. a) What do you understand by Data Acquisition System?
- b) Define the RS232 standard.
- c) Give the comparison between serial and parallel communication.
- d) How many timers are supported by 8051 microcontroller? Discuss timer and their associated register.

OR

Write a program to transmit string "RGPVBHOPAL" serially at band rate 4800 with one start and one stop bit. Eight bit ASCII code for string is stored at internal memory location from 40h to 48h.

EI/IC-501