

Roll No.

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B.Tech. (Sem. - 6th)**MICROCONTROLLER AND EMBEDDED SYSTEMS****SUBJECT CODE : EC - 306****Paper ID : [A0319]**

{Note : Please fill subject code and paper ID on OMR}

Time : 03 Hours**Maximum Marks : 60****Instruction to Candidates:**

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

Section - A

(10 × 2 = 20)

Q1)

- a) Define an Embedded processor.
- b) What is the function of PSEN and EA signals?
- c) Differentiate between Assembler and Compiler.
- d) Enlist some salient features of 8051.
- e) Discuss opcode and operand.
- f) How many ways an 8051 can be interrupted?
- g) What is the difference between overflow flag(OV) and carry flag(C)?
- h) Explain the functions of ALE in 8051?
- i) What is the function of SMOD bit in 8051?
- j) Explain the difference between MOVX and MOV instruction?

Section - B

(4 × 5 = 20)

- Q2)** Draw the functional block diagram showing the architecture of 8051 microprocessor. Explain the function of each block.
- Q3)** What do you mean by the addressing mode? Explain the various addressing modes of 8051 in detail with the help of Examples.
- Q4)** Write a program to multiply the two eight bit numbers.
- Q5)** Explain the difference between a Microprocessor and a Microcontroller.
- Q6)** What are the various serial transmission modes of 8051?

Section - C

(2 × 10 = 20)

- Q7)** Discuss design parameters of an Embedded System and their significance.
- Q8)** Interface a 2×16 LCD with 8051 and write program to display "Hello PTU" on the first line on that LCD.
- Q9)** Write short notes on the following:
- ARM processors.
 - Single bit instructions and their use.

