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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(EE) PT (Sem.-7)
MICROCONTROLLER AND PLC

Subject Code : BTEE-604

Paper ID : [74092]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**Q1. Answer briefly :**

- a) Define an embedded processor.
- b) How many ways an 8051 microcontroller can be interrupted?
- c) What is auto-reload mode of timer programming in 8051 microcontroller?
- d) What do you mean by PLC?
- e) What are \overline{PSEN} and \overline{EA} signals of 8051 do?
- f) What do you mean by SCON in 8051 microcontroller?
- g) Write the instruction to move value 34H into registers R5 and R6.
- h) What do you mean by bit jump?
- i) What is the difference between the MOVX and MOVC instructions?
- j) What is the classification of PLC?

SECTION-B

Q2. Explain the rotate and swap operation in 8051 microcontroller.

Q3. What is PLDs? Explain the FPGA architecture in detail and also discuss the design issues.

Q4. Explain the difference between PLC and Computer.

Q5. Explain the function of following instructions:

a) MOVA, address,

b) PUSH address,

c) XCH A, Rr.

d) ANL C, B.

e) SETB C.

Q6. Explain the program status word register in 8051 microcontroller.

SECTION-C

Q7. Assume that XTAL = 11.0592 MHz, write a program to generate a square wave of 50 kHz frequency on pin P2.3 using Timer 1 and mode 1.

Q8. What is embedded system? Explain the various parameters of an embedded system and its significance. Also, explain the embedded system design life cycles.

Q9. Write a program for the 8051 to transfer “YES” serially at 9600 baud, 8-bit data, 1 stop bit, do this continuously.