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Total No. of Pages : 02

Total No. of Questions : 18

**B.Tech.(EE) PT (Sem.-7)**  
**MICROCONTROLLER AND PLC**  
Subject Code : BTEE-604  
M.Code : 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****Answer briefly :**

1. Give any two differences between a microprocessor and a microcontroller.
2. List out the Features of 8051 Microcontroller?
3. What is a program counter?
4. What is a stack pointer?
5. List some 8051 Microcontroller applications in embedded systems?
6. Define clock cycle.
7. Define machine cycle.
8. What do you mean by serial data transmission?
9. Differentiate between PLC and hardwired system.
10. Implement AND gate using ladder logic programming.



**SECTION-B**

11. With the help of a suitable diagram explain the architecture of 8051 microcontroller.
12. Write a program to transfer value 41H serially (one bit at a time) via pin P2.1. Put two highs at the start and end of the data. Send the byte LSB first.
13. Write a program to find the number of zeros in register R2.
14. Explain how LCDs and keyboards can be interfaced with 8051 microcontroller?
15. Develop a ladder logic that will allow three switches in a room to control a single light.

**SECTION-C**

16.
  - a) What is an interrupt? List various types of interrupts available in 8051 Microcontroller?
  - b) Write a short note on "*RAM allocation in 8051 microcontroller*".
17.
  - a) Explain Program Status Word (PSW) special function register.
  - b) Write a short note on PLDs and FPGA.
18. Draw the block diagram of a programmable logic controller and explain each block in detail.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**

