

S. B. Roll. No.....

**MICROCONTROLLERS AND EMBEDDED SYSTEMS**

**5<sup>th</sup> Exam/ECE/3610/Nov'24**

**(For 2018 Batch Onwards)**

**Duration: 3Hrs.**

**M.Marks:75**

**SECTION-A**

**Q1. Do as directed.**

**15x1=15**

- a. There are \_\_\_\_\_ SFRs in 8051.
- b. 8051 microcontroller has \_\_\_\_\_ I/O ports.
- c. In \_\_\_\_\_ Data addressing mode, the data is given with the instruction itself
- d. Timer mode \_\_\_\_\_ is split-timer mode
- e. An \_\_\_\_\_ is a piece of software that converts source code into Hex code
- f. The \_\_\_\_\_ directive is used to store byte constants in program memory space
- g. PIC stands for \_\_\_\_\_
- h. RADAR stands for \_\_\_\_\_
- i. TMOD stands for \_\_\_\_\_
- j. The Intel 8051 has \_\_\_\_\_ Architecture
- k. The overlapping of instruction fetch and execution stage is known as \_\_\_\_\_
- l. A \_\_\_\_\_ is a computer program that is used to test and debug other programs
- m. There is \_\_\_\_\_ on chip ROM in 8051 microcontroller
- n. 8051 has an integrated UART, also known as \_\_\_\_\_
- o. Write one difference between microprocessor and microcontroller.

**SECTION-B**

**Q2. Attempt any six questions.**

**6x5=30**

- i. List down the various applications of microcontroller 8051.
- ii. Explain PSW registers of 8051 microcontroller
- iii. What do you mean by addressing mode? Explain the addressing modes of 8051 with example.
- iv. Explain all the logical group instructions with example.
- v. What do you mean by assembler directives? Explain any five assembler directives with the help of examples
- vi. What is PIC? Write down its features.
- vii. Explain the block diagram of 8051 in detail
- viii. Write short note on the following.      a) interrupt organization      b) Arduino

**SECTION-C**

**Q3. Attempt any three questions.**

**3x10=30**

- a. Draw the pin diagram of 8051 microcontroller. Explain the function of each pin
- b. Discuss the different modes of timer operation.
- c. Draw and explain the interfacing of LCD with microcontroller 8051. Also give its interfacing program
- d. Explain the architecture of general PIC.
- e. What do you understand by instruction format? Explain the instruction format with example.

