

1079

B.E. (Information Technology)
Eighth Semester
ITE-842: Embedded System Design

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

- I. Attempt the following:-
- Name two microcontrollers each having Harvard Architecture and Von-Neuman Architecture.
 - Name all interrupts available in 8051 family of Micro-controllers?
 - What all addressing modes are available in PIC family of microcontrollers?
 - Which PIC microcontrollers has an inbuilt CCP module?
 - Name the tools in RTOS which enable inter task communication & task synchronization? (5x2)

UNIT – I

- II. a) Compare a Microprocessor with a Microcontroller Explain with diagrams and examples.
- b) Compare a CISC device with a RISC device giving examples of both. (5,5)
- III. a) What are the special features of the architecture of 8051 micro-controllers? Explain.
- b) What all types of instructions are available in the MCS-51 family of microcontrollers? Explain with examples. (5,5)
- IV. a) How do the Timers/Counters in 8051 Family of micro-controllers operate?
- b) How can the MCS-51 and Atmel 89C51 be used for square wave generation? (5,5)

UNIT – II

- V. a) Explain the operation of the ADC unit in the PIC micro-controllers.
- b) What is the functionality of the special function registers in PIC micro-controllers? (5,5)
- VI. How is RTOS better than earlier architectures? Explain in detail with examples. (10)
- VII. Explain the functionality of the following in RTOS:- (2x5)
- Memory Management
 - Message Queues

x-x-x