

Exam.Code:0970  
Sub. Code: 7343

1059

M.E. (Electronics and Communication Engineering)  
Second Semester

ECE-1201: 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:-

- a) What is MIPS?
- b) What is an ASIC?
- c) What is the maximum program ROM space for PIC 16 Family?
- d) What is the drawback of using RAM data space for fixed data?
- e) What is RTC?
- f) Discuss various modes in operation, of system.
- g) Draw neatly the data framing of I2C.
- h) Discuss rules for labels in Assembly language.
- i) Name the register used to set the baud rate in PIC 16.
- j) List interrupt sources in PIC 16. (10x1)

**UNIT – I**

- II. a) Compare interrupt service routines (ISRs) and Tasks.  
b) Discuss characteristics of interrupt service routines (ISRs) and Tasks. (2x5)
- III. a) Discuss the timers of PIC 16. Also discuss various modes of timers.  
b) Write program in Assembly or C to generate a time delay of 1ms. (2x5)
- IV. a) What are the main requirements of single purpose processors used in embedded systems?  
b) Discuss various types of software tools used for designing an embedded system. (2x5)

**UNIT – II**

- V. a) What is Kernel? Discuss various components of Kernel in detail.  
b) Discuss main characteristics of Real Time Operating System (RTOS). (7,3)

P.T.O.

(2)

- VI. a) What do you mean by an IP core? What are different types of IP cores used in Systems on Chip?
- b) List the differences between a process and threads. (6,4)
- VII. a) Discuss Data parallel issues in processors
- b) Discuss how MIMD instruction is scheduled in two processors. (5,5)

x-x-x