(b) What are the basic structural units that are used for an embedded system ? How embedded system works ?   10

9. (a) Explain the interfacing of processor memory and I/O devices with embedded system.   10

(b) Discuss various applications of embedded system.   10

B.Tech. 6th Semester (ECE) F-Scheme

Examination, May–2017

MICROCONTROLLER AND EMBEDDED SYSTEM

Paper–EE-308-F

Time allowed : 3 hours]   *[Maximum marks : 100*

*Note : Attempt five questions in all, selecting one question from each section. **Question No. 1 is compulsory.***

1. (a) What is clock ? What is its role in microcontroller?   4

(b) What in instruction pipelining ? Discuss its benefits.   4

(c) Explain the function of RST and XTAL2 pins of 8051 microcontroller.   4

(d) Write in brief about 8051 interrupts ·   4

(e) What is the difference between embedded systems and general computing systems ?   4

Section-A

2. (a) What are the features of Harvard and Princeton architectures ? How can the Harvard mode be configured as the Princeton mode ?   10

(b) Differentiate between microcontroller and microprocessor.   10

3. (a) Write short note on external memory microcontrollers.   10

(b) Make a comparison between CISC and RISC. 10

Section-B

4. (a) Draw and explain the architecture of PIC microcontroller.   10

(b) Explain following addressing modes of PIC microcontroller with examples.   10

Direct addressing modes

Implicit addressing modes

Immediate addressing modes

5. Describe following instructions of PIC microcontroller.   20

MOVWF f

SUBLW k

COMF f, d

SWAP f, d

CLRWDT

BTFSS f, b

NOP

RETURN

RETFIE

SLEEP

Section-C

6. (a) Write in detail about various types of registers of 8051 microcontroller.   10

(b) Describe various types of instructions of Intel 8051.   10

7. (a) Discuss the main features of Intel 8051 family of microcontrollers. Write its area of applications also.   10

(b) Draw the interfacing arrangement for keyboard using 8051 microcontroller.   10

Section-D

8. (a) Define embedded system. Explain its classifications.   10