Exam.Code:0926
Sub. Code: 33605

2055
B.E. (Information Technology)
Eighth Semester
PCIT-801: Embedded System Design

Time allowed: 3 Hours **Max. Marks: 50**

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

x-x-x

Q.1a. State any two real time applications of Microcontrollers.

b. Which I/O ports are available in the 8051 family of Microcontrollers?

c. Name all the interrupts in PIC microcontrollers.

d. What is the CCP module in the PIC family of microcontrollers used for?

e. Name all the possible states of a task in RTOS? (2x5)

PART A

Q.2a Compare the Microprocessor with a Microcontroller with examples.

b Compare a CISC device with a RISC device giving examples of both. (5,5)

Q.3a What are the special features of the architecture of 8051 microcontrollers? Explain.

b What types of instructions are available in the MCS-51 family of microcontrollers? Explain with examples. (5,5)

Q.4a Explain the operation of Interrupts in 8051 Family of microcontrollers.

b Explain the implementation of serial communication in the MCS-51 family of microcontrollers w.r.t. a real life application? (5,5)

PART B

Q.5a What is the purpose of the Watchdog Timer in PIC Microcontrollers? How is it used?

b Explain the functionality of the OPTION, STATUS and INTCON registers in PIC microcontrollers. (5,5)

Q.6a Compare the Round Robin, Round Robin with interrupts and Function Scheduling architectures for Embedded Software with examples, advantages and drawbacks.

b How is RTOS Design better than earlier architectures for real problems? (5,5)

Q.7 Explain the functionality of the following in RTOS with examples from real time systems

i. Memory Management

i. Message Queues (5,5)

x-x-x