M.E. Second Semester (Computer Engg.) (F.T.) (C.G.S.)

13131 : Embedded System Design : 2 KMEF 3

P. Pages : 2 | **AU - 3238**

Time : Three Hours | Max. Marks : 80

* 0 4 3 5 *

Notes : 1. Answer **three** question from Section A and **three** question from Section B.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Diagrams and chemicals equations should be given wherever necessary.
5. Illustrate your answer necessary with the help of neat sketches.
6. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION - A

1. a) What are different categories of embedded system. **6**

b) What is task scheduling? Explain various Scheduling algorithm. **7**

OR

2. a) Compare Threads and Mutex. Explain inter thread communication. **7**

b) Explain the overview of embedded system architecture. **6**

3. a) Explain hardware features of AVR microcontroller with suitable block diagram. **7**

b) Describe the timer section of P1C18 XXX family. **7**

OR

4. a) Write the features of RISC implemented by P1C18 microcontroller. **6**

b) Explain hardware architecture of ATMEL 89C51 microcontroller with suitable. **8**

5. a) State & Explain different branch condition. **6**

b) A switch is connected to PinRB2. Write a program to the status of SW and perform the following a) If SW = 0 send letter "N" to port D. (b) If SW = 1 send letter "Y" to port D. **7**

OR

6. a) LEDs are connected to bit in Port B and Port C. Write a C18 program that shows the count from 00H to FFH on LEDs. **7**

b) Write down the steps in programming the A/D converter using polling. **6**

7. a) State when clock driven approach is applicable. Explain a clock driven scheduler. **7**

b) Explain a concept of sporadic job scheduling. **7**

OR

8.	a)	Explain in brief how to handle frame over run and how to do mode changes.	**7**
	b)	Write the notations and assumptions of clock driven scheduling.	**7**
9.	a)	Explain in brief schedulability test for EDF algorithm.	**6**
	b)	What are the sufficient schedulability conditions for RM and DM algorithm.	**7**

OR

10.	a)	Explain the schedulability test for fixed priority tasks with arbitrary response time.	**7**
	b)	What is busy intervals. Explain with example.	**6**
11.	a)	Explain in brief operation S_pS_l sporadic server.	**6**
	b)	Explain in brief fairness and starvation. Also explain how to eliminate starvation.	**7**

OR

12.	a)	What are different assumption of algorithm for scheduling a periodic and sporadic jobs?	**6**
	b)	Explain the preemptive weighted fair queueing algorithm.	**7**

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