23/4/19

B.E Full Time Degree END SEMESTER EXAMINATIONS, April/May2019

Fifth Semester, EEE / R- 2012

EE 8008 Embedded System Design

Time: 3 Hours

Max. Marks: 100

Answer ALL Questions

PART – A (10 x 2 = 20 Marks)

1. State two features that differ embedded uC from a general uC.
2. Compare simulator and emulator.
3. What is meant by RTS, CTS in serial RS232 BUS Communication?
4. Why is it an advantage to send data as frames of a packet?
5. Why is it important to include Processors with interrupt service routines?
6. What is real time & real time clock?
7. What is the advantage of context switching in RTOS?
8. How does counting semaphore function?
9. State how application of RFID helps for inventory maintenance.
10. What is importance of product retirement phase?


PART – B ( 5 x 16 = 80 Marks)

11) Explain briefly on how special Embedded processor have improved efficiency with inclusion of multitasking RTOS with scheduling mechanism. (16)

12 a) What is need to standardize Bus with communication protocols. Describe IIC serial communication BUS operation & its communication protocol. (4+12)

(OR)

12 b) Explain on " any two " of the following (8+8)

(i) SPI interface (ii) CAN Bus (iii) RS232 Bus

13 a) Explain breifly on the (i) Interrupt services handling (ii) Device drivers (8+8)

(OR)

13 b) Give the Building blocks for an Embedded system and explain on how timers and memory management helps multi interrupt handling to improve higher speed of process. (8+8)

14 a) Write briefly on *any two:* (8+8)

(i) Semaphores for intertask communication

(ii) mailbox & message for Interprocess communications

(iii) pipe & queue for multitasking

(OR)

14 b) Explain briefly on multitasking RTOS that includes (i) priority level switching & (ii) the round-robin scheduling mechanism (8+8)

15 a) Explain briefly embedded automation required for design of a washing machine. (16)

(OR)

15 b) Elaborate on the (i) Different phases for product development

(ii) Waterfall and spiral modelling (16)