

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 131756

Roll No.

B.Tech.

(SEM. VII) THEORY EXAMINATION, 2015-16

EMBEDDED SYSTEM

[Time:3 hours]

[MaximumMarks:100]

Section-A

1. Attempt **all** parts. All parts carry equal marks. Write answer of each part in short. (2x10=20)
 - (a) What are the characteristics of embedded system?
 - (b) Name some DSP used in embedded systems?
 - (c) In what ways CISC and RISC processors differ?
 - (d) List the important considerations when selecting a processor.
 - (e) What is watch dog timer?
 - (f) What is I2C?
 - (g) Define Semaphore.
 - (h) List the functions of a kernel.

- (i) What is the need for LCD and LED displays?
- (j) What are the two characteristics of synchronous communication?

Section-B

Attempt **any five** questions from this section. (10×5=50)

- 2. Explain the hardware units that must be present in the embedded systems.
- 3. Explain the serial communication using I2C, CAN, USB in detail.
- 4. Explain the Addressing modes of 8051 Microcontrollers.
- 5. Explain state transition diagram RTOS.
- 6. What are the Challenges in Embedded systems?
- 7. Write short note on :
 - i) Analog to digital converter
 - ii) UART
- 8. What do you mean by bus arbitration? Give the steps for accomplishing input output data transfer.

9. What is the difference between general purpose processors and ASIP's?

Section-C

Attempt **any two** questions from this section. (15x2=30)

10. i) Explain the goals of operating system services.
ii) Explain the three alternative systems in three RTOS for responding a hardware source call with the diagram.
11. Write short note on any of the three :
i) Von Neumann Architecture.
ii) ASIP's
iii) 80386 Architecture
iv) Latch Interconnection.
12. Explain the software tools in designing of an embedded system. Explain the sophisticated interfacing features in device ports.

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