PAPER ID-410111

Subject Code: RCS070

Roll No:

B. TECH.
(SEM -VII) THEORY EXAMINATION 2021-22
EMBEDDED SYSTEMS

Time: 3 Hours ***Total Marks: 70***

Note: Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 7= 14**

(a) Explain application of embedded?
(b) Define Sensors and Actuators.
(c) What are ASICs and PLDs?
(d) Define RTOS.
(e) What is task in CPU scheduling?
(f) Briefly explain device drivers.
(g) What is remote procedure call?

SECTION B

2. Attempt any *three* of the following: **7 x 3 = 21**

(a) Define an Embedded System? Explain the characteristics of Embedded Systems
(b) Write difference between embedded system and general computing system.
(c) Explain the case study of internet enable embedded system.
(d) What is memory shadowing? Explain in detail about memory shadowing with its advantages.
(e) What is Oscillator Unit? Explain the role of Real Time Clock in embedded system.

SECTION C

3. Attempt any *one* part of the following: **7 x 1 = 7**

(a) Explain the memory organization in embedded system. Explain automobile application in embedded system.
(b) How the CPU utilization can be improved by pipelining and superscalar. Explain CPU bus and bus protocol.

4. Attempt any *one* part of the following: **7 x 1 = 7**

(a) What do you mean memory management? Explain working of DMA.
(b) Write difference between general purpose and domain specific processors.

5. Attempt any *one* part of the following: **7 x 1 = 7**

(a) Explain different types of operating system. How task scheduling is done in operating system.
(b) Explain state machine model and Sequential Program Model.

6. Attempt any *one* part of the following: **7 x 1 = 7**

(a) Explain concept of Task communication shared memory and message passing system.
(b) Discuss Serial Bus communication protocols. How it is useful in networking of embedded systems.

7. Attempt any *one* part of the following: **7 x 1 = 7**

(a) Name and explain three structure or components that are commonly used in embedded system.
(b) Explain RTOS. Explain different task synchronization techniques.

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