

Roll No.

Total No. of Pages : 02

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**B.Tech.(ECE) (Sem.-7)
EMBEDDED SYSTEMS**

Subject Code : BTEC-701

M.Code : 71910

Date of Examination : 22-05-2023

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt **ANY FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt **ANY TWO** questions.

SECTION-A

1. Write briefly :

- a) What are the characteristics of an embedded system?
- b) What are the functions of RTOS?
- c) Define interrupt latency. How to avoid it?
- d) What are the various modes of serial communication?
- e) Compare RISC and CISC architecture.
- f) Differentiate the user threads and kernel threads.
- g) Compare the Dataflow model and finite state model.
- h) What is RFID? Explain.
- i) Explain the importance of the program status register (PSR).
- j) What is a pointer in C programming? Explain it with a suitable example.

SECTION-B

2. Explain CPU bus organization and protocol in detail.
3. Describe in detail the data transfer mechanism using DMA in Embedded System.
4. Explain semaphore and their applications in detail with suitable examples.
5. What is the need for an ADC module? Draw and explain the interfacing circuit of ADC in an ARM processor.
6. What are the various types of Conditional execution and loop statements in C programming? Explain it with an example.

SECTION-C

7. Explain the design concept of an embedded system-based Elevator control mechanism using a sequential model.
8. With a suitable diagram, explain the design process of an embedded system for the automatic chocolate vending machine application.
9. Explain the various types of the instruction set and addressing modes used in an ARM processor in detail.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.