

# C.U.SHAH UNIVERSITY

## Winter Examination-2019

**Subject Name: Embedded Systems**

**Subject Code: 4TE07ESY1**

**Branch: B.Tech (EC)**

**Semester : 7**

**Date : 18/11/2019**

**Time : 10:30 To 01:30**

**Marks : 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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**Q-1 Answer the following questions. (14)**

- a) What is a device driver?
- b) What are Hard and Soft Real Time Systems?
- c) What are Recursive Functions?
- d) What do you mean by Interrupt Latency?
- e) What is a Memory Leak?
- f) What is a Segmentation Fault?
- g) What is the role of Segment Register?
- h) What is Watchdog Timer?
- i) What is Mutex?
- j) What is Starvation?
- k) What is Deadlock?
- l) What is Multithreading?
- m) Write instruction to configure P0.14 as output pin using left operator and reset rest of the pins.
- n) Write instruction to set first 12 pins of PORT 0.

**Attempt any four questions from Q-2 to Q-8**

**Q-2 Attempt all questions (14)**

- (a) Classify Embedded system and discuss the various components of embedded System design.
- (b) Explain the ARM programmer's model with appropriate diagram.

**Q-3 Attempt all questions (14)**

- (a) How ARM handles exception? List all the steps. Also discuss various Exceptions and their priorities in ARM processor.
- (b) With diagram explain three modes of serial communication, 'synchronous', 'isochronous' and 'asynchronous'.



