Printed Pages: 02 **Sub Code: NEC803**
Paper Id: 131284 **Roll No.**

B TECH
(SEM-VIII) THEORY EXAMINATION, 2018-19
EMBEDDED SYSTEMS

Time: 3 Hours ***Total Marks: 100***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. **Attempt *all* questions in brief.** **2 x 10 = 20**
   a) Explain the need of watchdog timer.
   b) What do you mean by Real time scheduling?
   c) What are the different components of embedded system hardware?
   d) Define fault tolerance.
   e) What are the challenges faced in designing an embedded system?
   f) What is the need of sampling?
   g) Classify I/O devices briefly.
   h) What are the functions of RTOS?
   i) Give name of different embedded processor.
   j) Define signal conditioning in embedded system.

SECTION B

2. **Attempt any *three* of the following:** **10x3=30**
   a) Explain different types of memories required in an embedded system.
   b) Explain Task, process and threads in context to RTOS.
   c) Explain characterization of embedded computation system.
   d) Explain flow control mechanism in embedded system.
   e) Explain different services of OS.

SECTION C

3. **Attempt any *one* part of the following:** **10x1=10**
   a) Explain the application of washing machine using embedded system.
   b) What are the various characteristics of an embedded system?

4. **Attempt any *one* part of the following:** **10x1=10**
   a) Describe various strategies of communication for embedded system.
   b) Explain embedded control in detail.

5. **Attempt any *one* part of the following:** **10x1=10**
   a) Explain various Task scheduling models in RTOS.
   b) Explain various timer functions in operating system of embedded system.

6. **Attempt any *one* part of the following:** **10x1=10**
   a) Discuss various techniques of DAC with its advantage and disadvantages.
   b) Explain Frequency spectrum and sampling with necessary block diagram.

7. **Attempt any *one* part of the following:** **10x1=10**
   a) Explain recent trends in embedded processor.
   b) Which is the best programming language used as the development language in embedded system. justify your answer with valid reasons.