Hall Ticket No | | | | | | | | | | |  Question Paper Code: BESB01

# INSTITUTE OF AERONAUTICAL ENGINEERING

**(Autonomous)**

M.Tech I Semester End Examinations (Regular) - January, 2019

**Regulation: IARE–R18**

## EMBEDDED SYSTEM DESIGN

**Time: 3 Hours** **(ES)** **Max Marks: 70**

**Answer ONE Question from each Unit**
**All Questions Carry Equal Marks**
**All parts of the question must be answered in one place only**

### UNIT – I

1. (a) Define an Embedded System? Explain the characteristics of Embedded Systems. **[7M]**
   (b) Write difference between embedded system and general computing system. **[7M]**
2. (a) Describe software tools for designing an embedded system. **[7M]**
   (b) Write classification of embedded systems and explain in detail. **[7M]**

### UNIT – II

3. (a) Write difference between general purpose and domain specific processors. **[7M]**
   (b) Write classification of communication interfaces. Explain any one communication interface with example. **[7M]**
4. (a) What is memory shadowing? Explain in detail about memory shadowing with its advantages. **[7M]**
   (b) Explain the different types of processors according to instruction set architecture. **[7M]**

### UNIT – III

5. (a) What is Watchdog timer and explain the significance of it in micro controller. **[7M]**
   (b) Explain in detail about brown out protection circuit with neat sketch. **[7M]**
6. (a) Explain the role of Real Time Clock in embedded system **[7M]**
   (b) Discuss in detail about the functionality of RESET circuit in embedded system **[7M]**

## UNIT – IV

7. (a) What is operating systems and list the different types of operating systems. Write short notes on embedded operating systems. **[7M]**

   (b) What is scheduling. Explain scheduling algorithms in detail with an example. **[7M]**

8. (a) Write a short note on Context Switch and Task Scheduling. **[7M]**

   (b) Explain the Real Time characteristics of embedded operating system. **[7M]**

## UNIT – V

9. (a) Explain remote procedure call in distributed system with neat diagram. **[7M]**

   (b) Explain in detail, the different task communication synchronization issues encountered in Inter Process Communication(IPC). **[7M]**

10. (a) Explain about the shared data problem in multiple tasks and routines. **[7M]**

    (b) Explain the architecture of device driver and give applications of device drivers. **[7M]**

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