

**B.Tech.**  
**(SEM VIII) THEORY EXAMINATION 2017-18**  
**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) Draw the basic structure of embedded system?
- b) How embedded systems can be divided?
- c) What is sampling?
- d) Define signal and its type?
- e) What is Signal Conditioning?
- f) What is signal processing?
- g) What do you mean by embedded control?
- h) Define Fault and their types?
- i) Define Formal Verification?
- j) What are the embedded processors?

**SECTION B**

**2. Attempt any three of the following: 10 x 3 = 30**

- a) Explain the Application of Embedded system in daily life in detail?
- b) Explain the Real time operating system issues in embedded system?
- c) Explain Frequency spectrum with required diagram?
- d) Explain the usage of encoding and flow control mechanisms?
- e) Explain OSI protocol for real time systems?

**SECTION C**

**3. Attempt any one part of the following: 10 x 1 = 10**

- a) Explain the characteristics and requirements of embedded systems?
- b) Embedded systems are very useful. Justify

**4. Attempt any one part of the following: 10 x 1 = 10**

- a) Describe timing and clocks in embedded system with relevant example?
- b) Explain Task Modeling and management in embedded system?

**5. Attempt any one part of the following: 10 x 1 = 10**

- a) Explain various communication strategies for embedded systems?
- b) Discuss the concept of control hierarchy with neat block diagram.?

**6. Attempt any one part of the following: 10 x 1 = 10**

- a) Explain Modeling and Characterization of Embedded Computation System?
- b) Explain the process of digitization from ADC to DAC?

**7. Attempt any one part of the following: 10 x 1 = 10**

- a) What is the minimum performance criterion, and why is it important in the design of fault-tolerant systems?
- b) Explain the Trends in Embedded Processor?