

B.TECH.**THEORY EXAMINATION (SEM-VIII) 2016-17****EMBEDDED SYSTEMS***Time : 3 Hours**Max. Marks : 100**Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.***SECTION – A****1. Explain the following:****10 x 2 = 20**

- (a) What is an embedded system?
- (b) How suitable memory will be selected for the design of an embedded system?
- (c) Distinguish between an embedded OS and real time OS.
- (d) State the major function of a timer device in an embedded system.
- (e) What do you mean by frequency spectrum?
- (f) List the difference between ADC and DAC.
- (g) What is called as embedded control?
- (h) Mention the need of encoding in embedded systems.
- (i) Write the use of processor in embedded systems.
- (j) State any one language suitable for embedded systems.

SECTION – B**2. Attempt any five of the following questions:****5 x 10 = 50**

- (a) Explain the characteristics and requirements of embedded systems.
- (b) List and brief the main characteristics of embedded systems that distinguish such systems from other computing systems.
- (c) Describe timing and clocks in embedded system with relevant example.
- (d) Give the brief content of the following terms with necessary block diagrams.
 - (i) Signals
 - (ii) Frequency spectrum
 - (iii) Sampling
- (e) Provide various communication strategies for embedded systems.
- (f) Brief the usage of encoding and flow control mechanisms.
- (g) Enumerate the issues of fault tolerance in embedded system.
- (h) Describe the use of formal methods in verification of embedded system.

SECTION – C**Attempt any two of the following questions:****2 x 15 = 30**

- 3 (i) Embedded systems are very useful. Justify and state how embedded systems are classified.
(ii) Discuss some applications of embedded systems.
- 4 Brief the issues of real time operating systems.
- 5 What do you mean by embedded control? Illustrate the concept of control hierarchy with neat block diagram.