

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0672 Roll No.

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B. Tech.

(SEM. VIII) THEORY EXAMINATION 2010-11

EMBEDDED SYSTEMS

Time : 3 Hours

Total Marks : 100

- Note :** (1) Answer all questions.
(2) All questions carry equal marks.

1. Attempt any **four** parts : **(5×4=20)**
- (a) What are embedded systems ? Explain in brief.
 - (b) What are the different types of hardware, software and firmware come in embedded systems ?
 - (c) How embedded systems are classified ?
 - (d) Explain characteristics of embedded systems.
 - (e) What are the requirements for embedded systems ?
 - (f) 'Embedded systems are very useful.' Justify.
2. Attempt any **two** parts : **(10×2=20)**
- (a) Explain timing and clocks in Embedded System with example.

- (b) Explain :
- (i) Task modelling in Embedded System.
 - (ii) Management of Embedded System.
- (c) Explain difference between Real time system and Embedded system with example.

3. Attempt any two parts : (10×2=20)

- (a) What are the issues of Real time operating systems ?
Explain them briefly.
- (b) Explain followings :
- (i) Signals
 - (ii) Frequency spectrum
 - (iii) Sampling.
- (c) (i) Explain digitization using ADC.
(ii) Define and explain signal conditioning.

4. Attempt any two parts : (10×2=20)

- (a) Explain MARUTI Real time system and compare its functioning with embedded system in each paradigm.
- (b) What is embedded control ? Explain. Also discuss the control Hierarchy.

(c) What are communication strategies for embedded systems ? Explain in detail.

5. Attempt any two parts : (10×2=20)

(a) What is encoding and flow control in embedded systems ?
Define Modelling of embedded computation system.

(b) Discuss the issue of fault tolerance in embedded system.

(c) Describe the use of formal methods in verification of embedded system.