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

PAPER ID : 0672   Roll No. [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

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.