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

PAPER ID : 0672   Roll No.

B. Tech.

(SEM. VIII) EXAMINATION, 2008-09
EMBEDDED SYSTEMS

Time : 3 Hours]   *[Total Marks : 100*

Note :   (1)   Attempt **all** questions.

        (2)   All questions carry **equal** marks.

        (3)   Be precise in your answer.

        (4)   No second answer book will be provided.

1   Attempt any **two** parts of the following :   10×2=20

    (a)   What are the advantages and disadvantages of using a rapid development model during the embedded software development process?

    (b)   How would you classify Embedded system? Write down the different categorization. Explain with example.

    (c)   Mobiles and mini computer system (Palmtop) are the examples of Embedded system. If yes justify your answer with embeded system requirements.

2   Attempt any **two** of the following :   10×2=20

    (a)   Why real time system development process is more complex? Justify your answer with example.

(b) Write down short notes on following :

    (i) Task modelling

    (ii) Control data flow graph

(c) Explain liner and clock with the help of latch. Also explain DAG timer in embedded system.

3 Attempt any **two** questions of the following :   10×2=20

(a) Design a distributed embed system for a microwave oven. You will write use cases and scenarios, draw sequence diagrams, design interfaces and behaviours and click traceability. Consider a microwave oven with a simplified interface, such as one that might be placed next to a food vending machine. The oven has a door, a number of preprogrammed cooking buttons, a "done cooking bell" and a cancel button. The buttons are the only way to control cooking time. The generated idea is that each cooking button corresponds to an item in vending machine, so you might press a button to pop a bag of popcorn, next button to heat a noodle cup and so on.

(b) Write and explain the interfacing of (DAC, ADC) to 8051.

(c) Explain sampling theorem for band-pass signal.

4 Attempt any **two** of the following :   10×2=20

(a) Difference between flow-control and error control with the help of an example.

(b) What should be the goal during an embedded system development process? How does it vary from the software development process?

(c)   Which language you prefer for embedded system and why? Also give one programming example.

5   Attempt any **two** parts of the following :   **10×2=20**

(a)   Discuss some of the salient features to be considered at the time of memory selection for an embedded system.

(b)   Write short notes on

(i)   Encoding

(ii)   Fault tolerance

(c)   How formal verification is performed in embeded system ? Explain using an example.