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

PAPER ID : 0387   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.

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

(a)   What is embedded system? Also describe the design parameters of an embedded system.

(b)   Explain the following:

(i)   I/O sinking and sourcing

(ii)   PLD's

(iii)   Data path and FSM.

(c)   What is the use of processor? Also describe the ASIPs microcontroller and DSP chips.

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

(a)   Describe the following:

(i)   CISC and RISC processors.

(ii)   Harvard and Von Neumann Architecture.

(b)   Draw the functional block diagram of 8051 microcontroller. Also write its features.

(c)   Classify the addressing modes of 8051 microcontroller.

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

(a) Explain the memory organization in 8051 microcontroller. Also describe about the I/O parts in it.

(b) Briefly explain the following (8051):
   (i) Interrupts
   (ii) Counter
   (iii) Serial communication.

(c) Discuss the advantages of microcontrolled based systems over micro processor based system. Also discuss the register set of MCS-51 family of microcontrollers.

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

(a) Write down the requirements of RTOS. Also describe the terms tasks, states, semaphores and shaved data.

(b) Describe the advancement of processors. Also compare the features of 80386 and 80486.

(c) Explain the following:
   (i) Message queues and mail boxes (RTOS)
   (ii) Microprocessor interfacing.

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

(a) What is DMA and how does it work? Also briefly explain the multilevel bus architecture.

(b) Explain the following:
   (i) Serial and parallel protocols.
   (ii) LCD interfacing.

(c) Describe the push button interfacing in detail. Also describe the applications of PPI.