Paper ID [EC306]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem.- 6th)

MICROCONTROLLERS & EMBEDDED SYSTEMS (EC-306)

Time : 03 Hours   Maximum Marks : 60

Instruction to Candidates:

1) Section - A is **Compulsory**.
2) Attempt any **Four** questions from Section - B.   *MAY 2008*
3) Attempt any **Two** questions from Section - C.

Section - A

Q1) $(10 \times 2 = 20)$

a) What is the function of ALE signal in an 8051 microcontroller.

b) What are special function registers? Explain in brief.

c) Define an embedded processor.

d) What is auto-reload made of timer programming in 8051 microcontroller.

e) How many ways an 8051 microcontroller can be interrupted.

f) How 8051 microcontroller can be made do work in multiprocessor configuration.

g) What is co design? Explain with a flow-chart.

h) Explain the architectural differences between 8051 microcontroller and an ARM processor.

i) What are $\overline{PSEN}$ and $\overline{EA}$ signals of 8051 do?

j) What is the function of SMOD bit in 8051 μC.

Section - B

Q2) Explain the differences between a microprocessor and a microcontroller.

Q3) Write a program using 8051 µC do generate a square wave of 10 kHz.

Q4) Explain with the help of a flow chart the complete life cycle for a product development.

Q5) Write a program using 8051 microcontroller to interface 8051 microcontroller with an 8-bit flash A to D converter.

Q6) Draw the schematic to interface an 8051 µC With 16 K of ROM and 8K of RAM. You are availble with 4K chips of both ROM & RAM.

Section - C

(2 × 10 = 20)

Q7) Write a program using 8051 microcontroller to interface a 2 line x 20 characters. Also write a program sequence to display "HELLO THERE" on the LCD.

Q8) Write a program using 8051 µC to generate two square waves of 12 kHz. and 1 kHz simultaneously using interrupts.

Q9) Write short notes on the following:-
   a) Hardware/software partitioning
   b) ARM processor architecture.

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