

R09

Code No: 58042

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech IV Year II Semester Examinations, May - 2016****EMBEDDED SYSTEMS****(Computer Science and Engineering)****Time: 3 Hours****Max. Marks: 75****Answer any Five Questions
All Questions Carry Equal Marks**

- 1.a) What is an embedded computer system? Explain the characteristics of embedded computing applications.
- b) Explain the challenges in embedded computing system design. [7+8]
- 2.a) Why do we need a powerful interrupt structure in microcontrollers?
- b) Draw the format of TMOD and TCON registers in 8051 and explain the timer/counter operation with suitable diagrams. [5+10]
- 3.a) Explain the instructions used for accessing the external RAM and the on-chip ROM in the 8051, give any two examples.
- b) Explain about data transfer instructions of 8051 μ c with examples. [7+8]
- 4.a) Explain the different types of bit-level and byte-level jump instructions in 8051.
- b) Explain unsigned and signed subtraction. [10+5]
- 5.a) Classify the types of serial communication.
- b) Write about serial bus communication. [7+8]
- 6.a) What is a semaphore? Explain with an example how semaphores solve the shared data problem.
- b) Explain process management and memory management in embedded system. [7+8]
7. Explain about the following embedded software development tools.
a) Cross-Compiler b) Cross-assembler c) Linker d) Locator [15]
- 8.a) Write a note in Internet-enabled systems.
- b) Write about SHARC and compare with different types of architectures. [5+10]

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