Code No: 127CZ

R15

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, May/June - 2019
EMBEDDED SYSTEM DESIGN
(Common to ECE, ETM)

Time: 3 Hours   Max. Marks: 75

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A

(25 Marks)

1.a) Give few examples of embedded systems.   [2]
  b) Write the difference between Embedded Systems and General computing systems.[3]
  c) Define microcontroller.   [2]
  d) Differentiate between general purpose processor and application specific instruction processor.   [3]
  e) List the various methods available for developing the embedded firmware.   [2]
  f) What is purpose of reset circuit? Explain.   [3]
  g) What is an Operating system?   [2]
  h) List the features of RTOS.   [3]
  i) What is mean by IPC?   [2]
  j) What is meant by concurrency of task execution in real time system?   [3]

PART-B

(50 Marks)

2.   Explain the classification of embedded systems based on different criteria in detail and give an example for each.   [10]
OR
3.   Explain the various purposes of embedded systems with illustrative examples.   [10]

4.   What is the difference between microprocessors and microcontrollers? Explain the role of microprocessors and controllers in embedded system design.   [10]
OR
5.   Explain the different communication on-board communication interfaces in brief. [10]

6.   What is watch timer? Also explain its role in embedded system with examples.   [10]
OR
7.   Explain the role of RTC in embedded system design, with examples.   [10]

8.   What is a process? With a neat representation explain the process states and state transition.   [10]
OR
9.   Explain the different multitasking models in the operating system context.   [10]

10.   Explain the architecture of device driver with neat sketch and give the applications of device drivers.   [10]
OR
11.a) Explain message passing technique for inter process communication in detail.
   b) Explain the concept of Shared memory in task communication.   [5+5]

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