Code No: 137CJ

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, December - 2019
EMBEDDED SYSTEMS
(Information Technology)

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 as sub questions.

PART – A

(25 Marks)

1.a)   What is an embedded system? What are the main components of embedded systems?
                                                                                       [2]
   b)   List the characteristics of an embedded system.   [3]
   c)   Define SRAM and DRAM cell.   [2]
   d)   What are the merits and limitations of RS232 interface?   [3]
   e)   What is an embedded Firmware?   [2]
   f)   What are the assembler directive instructions? Give examples.   [3]
   g)   Define task scheduling.   [2]
   h)   Define a task and explain about task control block.   [3]
   i)   What is a compiler?   [2]
   j)   What is the importance of boundary scan?   [3]

PART – B

(50 Marks)

2.   Describe the classification of an embedded system with an example for each.   [10]
                                        OR
3.   What are the different qualities attributes to be considered in an embedded system design?
                                                                                       [10]

4.   Describe the role of processor selection with an example.   [10]
                                        OR
5.   Explain the different factor that needs to be considering in the selection of memory for embedded system?   [10]

6.   What is the requirement of the firmware for embedded systems? Explain the process of embedded firmware development.   [10]
                                        OR
7.   Explain in detail about SPI communication protocol and its interfacing techniques.[10]

8.   What is a process? Explain the Round Robin process scheduling with interrupts.   [10]

                                        OR

9   Explain how interrupt routines handled in embedded system with examples.   [10]

10.a)   Explain in detail about Emulator and In-Circuit Emulator.
   b)   What is cross compilation and what are the types of files generated on cross compilation?
                                                                                    [5+5]

                                        OR

11.   Describe the integrated development environment (IDE) basic principles, with respect to
        embedded system development.   [10]

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