Code No: 137CH

R16

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

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)	Give different classifications of embedded systems.	[2]
b)	GIve the typical characteristics of an embedded system.	[3]
c)	What is the role of DSP in an embedded system design?	[2]
d)	List the differences between RAM and ROM.	[3]
e)	What is an embedded firmware?	[2]
f)	Briefly explain about oscillator unit in Embedded System.	[3]
g)	Write the advantages of threads.	[2]
h)	What is the difference between multiprocessing and multitasking?	[3]
i)	Write the advantages of RPC.	[2]
j)	What is task synchronization in embedded systems?	[3]

PART – B

(50 Marks)

2. Explain the various purposes of embedded systems in detail with example. [10]

OR

3. What are the quality attributes of embedded systems? Explain. [10]

4. What are the various types of memories used in embedded systems? Explain. [10]

OR

5. Discuss about external communication interfaces in detail. [10]

6. Explain the need of Brown-out Protection Circuit and Watchdog Timer in Embedded System. [10]

OR

7. What are the different approaches available for Embedded Firmware development? [10]

8. Explain how thread and process are used in embedded system. [10]

OR

9. What are the different types of operating systems? Explain. [10]

10.a) Discuss about shared memory in detail.
b) Explain Remote Procedure call with an example. [5+5]

OR

11.a) What is the use of Device Drivers? Explain.
b) Discuss about task communication issues in brief. [4+6]

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