Code No: 117CZ

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, July/August - 2023
EMBEDDED SYSTEM DESIGN
(Electronics and Communication Engineering)

Time: 3 Hours **Max.Marks:75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	Give some examples of large-scale embedded systems.	[2]
b)	List some applications of embedded systems.	[3]
c)	What is a sensor?	[2]
d)	What is a relay? What are the different types of relays available?	[3]
e)	What is embedded firmware?	[2]
f)	What is an absolute object file?	[3]
g)	What is process life cycle?	[2]
h)	What are the advantages of using user level threads?	[3]
i)	What is mutex?	[2]
j)	What are the merits and demerits of the priority ceiling?	[3]

PART – B

(50 Marks)

2. Explain the difference between general computing and embedded systems. [10]

OR

3. Discuss the operational quality attributes that must be addressed in any embedded system development. [10]

4.a) Compare general purpose and domain specific processors.
b) Write a short note on memory shadowing concepts. [5+5]

OR

5. Explain the different types of external communication interfaces in embedded systems. [10]

6. What is the role of the reset circuit and watchdog timer in embedded system design? Explain. [10]

OR

7. Explain the high-level language based embedded firmware development technique. [10]

8. Explain the different queues associated with process scheduling. [10]

OR

9. Compare the multi-processing and multitasking with suitable examples. [10]

10. Explain the shared memory based inter process communication. [10]

OR

11. Explain the architecture of device drivers. [10]

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