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Roll No.

Total Pages : 3

003706

Dec. 2021

**B.Tech. (CE) VII SEMESTER
Real Time Systems (PEC-CS-S-701-II)**

Time : 90 Minutes]

[Max. Marks : 25

Instructions :

1. *It is compulsory to answer all the questions (1 mark each) of Part-A in short.*
2. *Answer any three questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART - A

1. (a) Define the term Real time system. (1)
- (b) Why PROM programmer is used in embedded system development? (1)
- (c) Distinguish between periodic and sporadic tasks. (1)
- (d) Define the term tardiness of a job associated with real time systems. (1)

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- (e) Differentiate between desktop operating system and RTOS. (1)
- (f) What is the liveness property of real time operating system? (1)
- (g) What is the minimum operating system Kernel? (1)
- (h) Explain the term fail safe associated with fault. (1)
- (i) How fault can be corrected? (1)
- (j) How can you decide the data typing for real time languages? (1)

- 5. (a) Explain the resource modelling under real time systems. (3)
 - (b) What is a fault? Explain faults based on its temporal behaviour. (2)
 - 6. (a) Write the desirable characteristics of real time languages. (2)
 - (b) Explain N-version programming associated with software redundancy. (3)
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PART - B

- 2. (a) What are challenges and issues in Embedded System design? Explain. (3)
- (b) Explain any tool to transfer the embedded software into the target machine. (2)
- 3. (a) Explain the EDF (Earliest Deadline First) scheduling algorithm in details. (3)
- (b) Distinguish between hard and soft timing constraints with examples. (2)
- 4. Why priority ceiling protocol is used? Write the capabilities of the Vxworks real time operating system. (5)