	Uttech
Name:	(4)
Roll No.:	The Description and Explored
Invigilator's Signature :	

# CS/M.Tech(SE)/SEM-1/PGSE-102/2012-13 2012

### ADVANCED OPERATING SYSTEMS

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

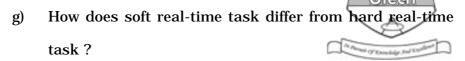
Candidates are required to give their answers in their own words as far as practicable.

### **GROUP - A**

- 1. Answer any *seven* of the following questions.  $7 \times 2 = 14$ 
  - a) Why physical clock cannot be implemented in "Distributed System"?
  - b) How distribution system differs from parallel system?
  - c) How does granularity affect DSM system performance?
  - d) What is home-less coherence protocol?
  - e) How "file-level transfer" differs from "record-level" transfer?
  - f) What is the difference between "Actuator" and "Sensor"?

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- h) What do you mean by the term "real-time"?
- i) What are the disadvantages of device driver?
- j) What is the basic principle of EDF scheduling algorithm?

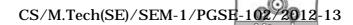
### **GROUP - B**

Answer any *four* of the following.  $4 \times 14 = 56$ 

- 2. a) What is the main difference between loosely coupled and tightly coupled systems?
  - b) Explain the structure of a real-time operating system with diagram.
  - c) Explain any two name resolution techniques.

$$2 + (3 + 3) + (3 + 3)$$

- 3. a) What type of supports can be achieved from distributed operating system?
  - b) Explain DES algorithm with diagram.
  - c) Explain the characteristics of real-time system.
  - d) Why real-time operating system must support mutlitasking? 2 + (3 + 3) + 4 + 2



- 4. a) "Real-time system is basically made for handling real-time exceptions". Justify.
  - b) Explain RPC-mechanism.
  - c) How simple non-nested interrupts are being handled in real-time operating system?
  - d) Explain PaaS.

$$2 + 5 + 4 + 3$$

- 5. a) What is context switch?
  - b) How will you choose a commercial real-time operating system?
  - c) Do you think that RTOS supports user-level threads?

    Justify.
  - d) Explain mini-computer model. Compare and contrast workstation model with workstation-server model.

$$2 + 4 + 2 + (3 + 3)$$

- 6. a) If context-switch time gets increased in an RTOS, what will happen and why will it happen?
  - b) What is a sporadic stimulus? Give an example.
  - c) Explain the roll of name-agent, name server in case of name services. What is partitioned namespace?
  - d) Suppose you are given with only two scheduling algoritm EDF and RMA. Now which algorithm will you pick up for RTOS ? Justify.

$$2 + (1 + 1) + (2 + 2 + 2) + (1 + 3)$$

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- 7. a) Explain the concept of "Lamport's Logical Clock'
  - b) How a typical data is being accessed in DFS? Explain with diagram.
  - c) Explain the parameters of a job in RTOS. 5 + 5 + 4

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