B.Tech. VII Semester (Main/Back) Examination - 2014
Electronics & Communication Engg.
7EC6.3 Operating System
(Common EC, EX)

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 24

Instructions to Candidates:

Attempt any **five** questions, selecting **one** question from each **unit**. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.)

Unit - I

1. a) What is operating system? Explain the various types of operating system **(8)**

   b) How does window handle various operating system services? Explain. **(8)**

OR

1. a) Explain the operating system services in detail? **(8)**

   b) Write short note :

   i) System Generation

   ii) Linux Operating System **(4×2=8)**

Unit - II

2. a) Explain life cycle of process and distinguish between process and thread. **(8)**

   b) Explain state transition diagram of Process and also explain Process Control Block(PCB) **(8)**

OR

2. a) Which CPU scheduling method will give the minimum average waiting time? What is the main difficulty in its implementation? **(8)**

   b) There are 4 processes with 2,9,7,17 CPU bursts. Compute turn around time for round robin and preemptive SJF scheduling. Assume time quantum as 4 units. The processes assigned at 0,3,2,1 time respectively. **(8)**

Unit - III

3. Explain the following terms of memory management
   i) Fragmentation
   ii) Swapping
   iii) Paging
   iv) Segmentation   (4×4=16)

OR

3. a) Explain the Page-Replacement technology in detail.   (8)
   b) How many page faults would occur for the following replacement also.   (8)
      i) FIFO
      ii) Optimal replacement for the string 1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6.
          Three frames are allocated in main memory only.

Unit - IV

4. a) What are the different access methods used with file system?   (8)
   b) Explain the technique of user Authentication?   (8)

OR

4. a) Explain the implementation of Files and Directories Management?   (8)
   b) What is Firewall? Why it is used. Explain in detail. rtuonline.com   (8)

Unit - V

5. a) What is deadlock? Explain the deadlock preventation tech.   (8)
   b) Explain the deadlock detection and recovery methods?   (8)

OR

5. Consider the following Scenario of a system :-

	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P_0	0	1	0	7	5	3	3	3	2
P_1	2	0	0	3	2	2			
P_2	3	0	2	9	0	2			
P_3	2	1	1	2	2	2			
P_4	0	0	2	4	3	3			

Answer the following questions using Banker's algorithm

i) What is content of matrix used. Is system in safe state.

ii) If a request from process P_1 arrives for (1,0,2), can the request be granted immediately.   (16)

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