

FACULTY OF ENGINEERING
B.E. 3/4 (CSE) I – Semester (Main) Examination, November 2013

Subject: Operating Systems

Time:3 Hours

Max.Marks: 75

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1. Differentiate process and thread. (2)
2. Define the following terms:
 - i) Throughput
 - ii) Waiting time
 - iii) Turnaround time
 (3)
3. What is demand paging? (2)
4. List the methods used for file access. (2)
5. What is a semaphore? Explain the operations that can be performed on it. (3)
6. What is resource allocation graph? (3)
7. What is the purpose of stable storage? (2)
8. Write a short note on STREAMS. (3)
9. List the design principles of UNIX. (3)
10. What is hardware abstraction layer? (2)

PART – B (50 Marks)

- 11.(a) What is PCB? Explain the purpose of PCB. (3)
- (b) Discuss threading models. (3)
- (c) Explain multi-level feedback queue scheduling algorithm. (4)
12. Find average waiting time and average turn around tree for the following example in (i) FCFs, (ii) RR (Time slice = 2 M), (iii) SJF and (iv) SRTF. (10)

Process	Burst time	Arinature
P1	25	0
P2	28	2
P3	8	4
P4	4	6

- 13.(a) Explain classical problems of synchronization. (5)
- (b) Explain Banker's Algorithm for deadlock avoidance. (5)
14. Explain disk scheduling algorithms with an example. (10)
- 15.(a) Explain DMA. (5)
- (b) Explain segmentation with a neat diagram. (5)
- 16.(a) How process management is performed in LINUX? Explain. (5)
- (b) Explain the architecture of WINDOWS – XP. (5)
17. Write a short note on any two: (10)
 - a) Directory implementation
 - b) RAID
 - c) Page replacement algorithm.