Code No. 6116 / S

# FACULTY OF INFORMATICS

B.E. 3/4 (IT) I – Semester (Supplementary) Examination, July 2014

### Subject : Operating Systems

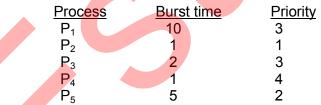
## Time : 3 hours

## Max. Marks : 75

### **Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B. PART – A** (25 Marks)

1	Mention advantages of multiprocessor system over a single processor system.	2
2	Distinguish system calls and system programs.	2
3	List the memory hierarchy.	2
4	What are the two models of inter-process communication? Give the strengthness and	
	weakness of the two approaches.	3
5	List out the important differences between paging and segmentation.	3
6	What is process control block?	2
7	How is reliability by redundancy obtained in disks?	2
8	Define : seek time, latency time and transfer time.	3
9	What is a working set model?	3
10	List out different types of security attacks.	3
PART – B (50 Marks)		

- a) Describe the differences among short term, medium term and long term scheduling.
  b) What are the methods for a handling deadlocks? Explain, briefly.
- 12 Consider the following set of processes, with the length of the CPU burst given in milliseconds.



The process are assumed to have arrived in the order  $P_1$ ,  $P_2$ ,  $P_3$ ,  $P_4$ ,  $P_5$  all at time 0.

- i) Draw four Gastt charts that illustrate the execution of these process using the following scheduling algorithms : FCFS, SJF, non preemptive priority (a smaller priority number implies a higher priority) and RR (quantum = 1).
- ii) What is the turn around and waiting time of each process for each of the scheduling algorithm?
- 13 a) Explain the readers-writer problem of synchronization and explain the semaphoresolution for it.
  - b) What are the implications of assigning a new timestamp to a transaction that is rolled back? How does the system process transactions?
- 14 Discuss the various disk scheduling strategies.
- 15 a) Explain various allocation methods.
  - b) What do you mean by access rights in protection? Explain.
- 16 a) Explain how cryptography is used as a security tool.
  - b) Specify goals and principles of protection.
- 17 Write short notes :
  - a) File system b) RAID structure

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(5 + 5)

6

4

10

5

5

6

4

5

5

10