BTS-V-11-14- 0857 Reg. No. | | | | | | | | | D

B.Tech. Degree V Semester Examination November 2014

IT 1502 OPERATING SYSTEMS

(2012 Scheme)

Time : 3 Hours Maximum Marks : 100

PART A

(Answer *ALL* questions)

(8×5 = 40)

I. (a) What is race condition? Explain.

(b) Briefly explain the implementation of monitor program for achieving mutual exclusion.

(c) How a buddy system is used for memory management? Explain.

(d) What is demand paging? Explain

(e) Explain the different file operations.

(f) Explain the working of DMA.

(g) What are the different conditions for deadlock?

(h) Explain the concept of two phase locking related to deadlock.

PART B

(4 × 15 = 60)

II. (a) Explain the different process states and need for interprocess communication. (8)

(b) Consider the following set of processes, with the length of CPU burst time given in milliseconds. (7)

Process	Burst time
P_1	5
P_2	8
P_3	6
P_4	4

Schedule these processes according to FCFS and SJF algorithm and (i) draw the Gantt chart showing the scheduling result (ii) find out the overage waiting time and turn around time for using FCFS and SJF algorithm.

OR

III. (a) Explain the producer consumer problem with an example. (10)

(b) Describe two-level scheduling. (5)

IV. (a) What are the advantages of using bit map in memory management? (5)

(b) Briefly explain (10)

(i) virtual memory

(ii) multilevel page tables.

OR

V. Compare the features of different page replacement algorithms. Explain the method of finding out page fault in these algorithms with examples. (15)

VI. (a) Explain the different allocation schemes used in file implementation. (8)

(b) Explain the various issues concerned with security of file system. (7)

OR

VII. (a) What is seek Time and latency time? (3)

(b) Explain Shortest Seek First (SSF) disk scheduling algorithm. (6)

(c) Explain the different types of clocks used in computers. (6)

VIII. (a) Explain the different deadlock detection and recovery techniques. (10)

(b) What is starvation? (5)

OR

IX. (a) Explain the banker's algorithm for multiple resources. (8)

(b) Describe the various deadlock prevention methods. (7)

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