

Seventh Semester B.E. Degree Examination, December 2010

Operating Systems

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. What is an operating system? Explain the designer's view of an operating system. (05 Marks)
b. What are the common tasks performed by an OS? (05 Marks)
c. Explain time sharing OS with respect to :
i) Scheduling ii) Memory management. (10 Marks)
- 2 a. Explain kernel based and micro kernel based OS. (12 Marks)
b. Explain the following :
i) Resource preemption ii) Concurrent sharing iii) Spooling. (08 Marks)
- 3 a. Explain state and state transitions in processes. (06 Marks)
b. Explain the content of process control block. (06 Marks)
c. Explain : i) Kernel level threads ii) User threads. (08 Marks)
- 4 a. Explain kernel memory allocator methods. (10 Marks)
b. Compare static and dynamic memory allocation methods. (05 Marks)
c. Explain the non-contiguous allocation method. (05 Marks)

PART – B

- 5 a. Explain demand paging. (08 Marks)
b. Explain the data structures in virtual memory (VM) handler. (06 Marks)
c. For the following page reference string, calculate the number of page faults with FIFO, when :
i) Number of page frames are three
ii) Number of page frames are four.
Page reference string : 5 4 3 2 1 4 3 5 4 3 2 1 5. (06 Marks)
- 6 a. Explain long term scheduling, medium term scheduling and short term scheduling. (10 Marks)
b. With the help of examples, explain : (10 Marks)
i) FCFS scheduling ii) Shortest job next scheduling iii) Round robin scheduling.
- 7 Write short notes on :
a. Redundant array of inexpensive disks (RAID) (10 Marks)
b. Allocation of disk-space. (10 Marks)
- 8 a. What is a mail-box? With an example, explain the features of mail boxes and its advantages. (10 Marks)
b. Discuss primary issues in message passing implementation. (10 Marks)
