G - 925 (Pages : 02) COMP 5-6 (RC)

[Total No. of Questions : 8]

T.E. (Computer) (Semester - V) (Revised 07-08) Examination, May 2011

OPERATING SYSTEMS

Duration : 3 Hours **Total Marks : 100**

Instructions : 1) Answer any five questions by selecting at least one from each Module

2) Assume appropriate data wherever necessary.

MODULE - I

Q1) a) What is Operating system? Explain different types of operating systems. **[7]**

b) Explain how process changes its states during its lifetime with the help of a five State Process Model. Draw appropriate diagrams. **[6]**

c) Differentiate between user-level and Kernel-level threads. **[4]**

d) What is role of PCB in operating system? **[3]**

Q2) a) Explain Multilevel feedback queue scheduling with the help of neat diagram. **[6]**

b) Explain how Mutual Exclusion is achieved with Hardware support. **[7]**

c) What are Messages? Explain different design issues of message passing systems for inter process communication and synchronization. **[7]**

MODULE - II

Q3) a) With the help of example explain what is deadlock? What are the necessary conditions for the occurrence of a deadlock? **[6]**

b) What do you understand by deadlock avoidance? Explain deadlock avoidance with the help of suitable example. **[7]**

c) What do you understand by demand paging? Enumerate and explain briefly the steps in the sequence of demand paging when a page fault occurs. **[7]**

Q4) a) With the help of an example explain optimal page replacement algorithm. **[5]**

b) What is thrashing? Suggest solution to overcome this problem. **[5]**

c) What is segmentation? How is sharing of segments done in a segmented memory system? **[7]**

d) What do you mean by a logical address space and a physical address space? **[3]**

P.T.O.

MODULE - III

Q5) a) List the attributes of file. Also explain different types of access methods related to file systems. [6]

b) Draw and Explain [7]

i) Tree structured directory structure

ii) Acyclic graph directory structure.

c) Explain how File system management is done in UNIX. [7]

Q6) a) State and explain different services that are provided by kernel I/O subsystem. [8]

b) Write a short note on swap space management. [6]

c) What is a bad block? Explain techniques used for handling bad blocks. [6]

MODULE - IV

Q7) a) Explain various types of security threats. [4]

b) Explain how access matrix is used for file access control. [5]

c) What are different types of malicious programs? How they are classified? Explain any two. [7]

d) Write short note on intruders. [4]

Q8) a) Explain with example various types of filters (any four) in UNIX shell. [6]

b) Write a shell program to find factorial of a given number. [4]

c) How permissions for file can be changed in UNIX. Explain with the help of an example. [4]

d) Explain the use of following wild cards/meta characters with example. [6]

i) *

ii) ?

iii) [ijk]

✪✡✪✡