Total No. of Printed Pages:2

SUBJECT CODE:- 450
FACULTY OF ENGINEERING AND TECHNOLOGY
T.E.(CSE/IT) Examination Nov/Dec 2015
Operating System
(Revised)

[Time: Three Hours] **[Max. Marks: 80]**

"Please check whether you have got the right question paper."

N.B i) Question No. 1 from section A and Question No. 6 from section B are compulsory.
ii) Solve any two questions from each section from the remaining questions.

Section A

Q.1 Solve any five 10

i. What is the difference between loosely coupled and tightly coupled system?
ii. What is a monitor?
iii. Distinguish between client-server and peer-to-peer models of distributed systems.
iv. Explain the terms : critical section & mutual exclusion.
v. What is the significance of process control block (PCB)?
vi. What is the difference between file and database?
vii. List file organization methods

Q.2 a) Explain process states and process control block in detail. 08
b) Explain OS as a resource manager. 07

Q.3 a) Explain essential properties of 08
(i) Batch system (ii) Real time system (iii) Embedded system (iv) Distributed system.
b) What is dining philosopher's problem? Explain its solution with monitor 07

Q.4 a) What are the points to be considered in file system design? Explain linked list allocation and indexed allocation in detail. 08
b) Differentiate between windows and Unix file system. 07

Q.5 a) What is a directory? Explain directory operations in detail. 07
b) What is a semaphore? Discuss producer consumer problem with semaphore 08

Section – B

Q.6 Solve any five 10

i. What is logical address and physical address?
ii. Why page replacement is required? List various page replacement algorithms.
iii. Discuss in short best fit memory allocation
iv. Mention various disk scheduling algorithms
v. How the track of free blocks is kept in disk space management?
vi. What is a deadlock?
vii. Define safe state of a system.

Q.7 a) What is paging? Discuss basic paging technique in detail. 07
b) Consider the following page reference string : 08
1,2,3,4,5, 3,4,1,6,7,8,7,8,9,7,8,9,5,4,5,4,2,
How many page faults would occur for the following page replacement algorithm assuming four frames
(i) LRU and (ii) FIFO

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Q.8 a) Discuss the following disk scheduling algorithms 08
(i) SSTF and (ii) C-SCAN
b) Discuss briefly the following issues related to device independent i/o software 07
(i) Uniform interfacing for device drivers
(ii) Buffering

Q.9 a) Explain deadlock detection with multiple resources of each type. 08
b) Explain the system structure of windows 7 07

Q.10 Write short note on any 3 15

i. Ostritch algorithm
ii. Process and thread management in windows 7
iii. RAID
iv. Segmentation
v. Page table

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