

1/6/13

Dept



COMP 5 – 6 (RC)

T.E. (Computer) (Semester – V) (RC) Examination, May/June 2013 OPERATING SYSTEMS

Duration : 3 Hours

Total Marks : 100

- Instructions :** 1) Answer **any five** questions by selecting **at least one** from **each** Module.
2) Sketch diagram **wherever** required.
3) Assume appropriate data **wherever** necessary.

MODULE – I

1. a) Define the essential properties of following types of operating systems. 6
 - i) Time sharing system
 - ii) Batch systems.
- b) Explain Process Control Block in detail. 5
- c) Explain user level threads and Kernel level threads. 6
- d) List any two benefits of Microkernel Organization. Explain any one. 3
2. a) With the help of example explain Fair-Share scheduling. 5
- b) Write a short note on semaphores. Also with the help of symbolic code explain implementation of producer-consumer problem using semaphores. 8
- c) What are Messages ? Explain any two design issues related to message passing system. 7

MODULE – II

3. a) Explain Deadlock prevention. 6
- b) With the help of example explain Bankers algorithm. 5
- c) How to deal with recovery from deadlock ? 5
- d) Differentiate between Logical versus Physical address space. 4
4. a) Write a short note on inverted Page table. 5
- b) List different page replacement algorithms. Explain any two. 6
- c) What is cleaning policy ? 4
- d) Explain Protection and sharing in context to segmentation. 5

P.T.O.



MODULE - III

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| 5. a) List different schemes for defining the logical structure of directory. Explain any one. | 5 |
| b) What is file ? List and explain its attributes and operations performed on it. | 6 |
| c) Explain any two key features of NTFS. | 3 |
| d) Write a short note on Unix File Management. | 6 |
| 6. a) Explain different steps in a DMA transfer. | 5 |
| b) What are bad blocks ? How they are handled ? | 5 |
| c) List and explain different services provided by Kernel I/O subsystem. | 7 |
| d) Differentiate between block and character devices. | 3 |

MODULE - IV

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| 7. a) Write a short notes on : | 16 |
| i) Windows security | |
| ii) Access matrix | |
| iii) Worm | |
| iv) Intruder. | |
| b) Write a shell program to find squares of first 20 numbers. | 4 |
| 8. a) What is Filter ? Explain any three types of filters in Unix shell. | 6 |
| b) Explain following shell commands with example. | 10 |
| i) ps | |
| ii) bc | |
| iii) chmod | |
| iv) ls | |
| v) mv. | |
| c) Write a shell program to find the reverse of a number. | 4 |