D 22595 **(Pages : 2)** **Name**

Reg. No. . . . . .

THIRD SEMESTER M.Sc. DEGREE EXAMINATION, JANUARY 2012

Computer Science

CSC 3C 01—OPERATING SYSTEM

(2010 admissions)

Time : Three Hours **Maximum Weightage : 36**

Part A

Answer **all** *questions.*
Each question carries 1 ***weightage.***

1. **Define Kernel. What do you mean by kernel model ?**
2. **List and explain the four basic types of user mode processes supported by Windows.**
3. **Differentiate between the characteristics of modern Unix systems and Linux.**
4. **Give the purpose of memory tables, JO tables, file tables and process tables.**
5. **Explain the four basic thread operations.**
6. **Briefly explain the significance of semaphores in concurrency control.**
7. **Explain relocation in memory management.**
8. **Differentiate paging and segmentation.**
9. **Explain any *two* page replacement algorithm.**
10. **Briefly explain FCFS scheduling.**
11. **Differentiate turnaround time and response time.**
12. **List objectives of file management systems.**

(12 x 1 = 12 weightage)

Part B

Answer any **six** *questions.*
Each question carries **2** ***weightage.***

13. **Discuss the architecture of modern Unix Operating System.**
14. **Discuss the principal Linux Kernal components.**
15. **Briefly explain five-state process model.**
16. **Write notes on symmetric multiprocessing.**
17. **Explain windows virtual address map.**

Turn over

18. **With the help of block diagram, explain data structures used for paged virtual memory in Unix systems.**

19. **Write notes on process and thread priorities in Windows scheduling.**

20. **Explain the need for buffering. Discuss various approaches to buffering.**

21. **What is an i-node ? Write notes on file allocation in Unix file management.**

(6 x 2 = 12 weightage)

Part C

Answer any **three** *questions.*
Each question carries **4** ***weightage.***

22. **Discuss Windows thread and SMP management.**

23. **(a) Explain how synchronization objects and critical section provides synchronization in WINDOWS.**

    (b) Explain the role of semaphores and signals in UNIX interprocessor communication and synchronization.

24. **Give a detailed account of Linux memory management.**

25. **Explain aspects of real-time scheduling.**

26. **Discuss the salient featuers of Unix Scheduling.**

27. Discuss the features of WINDOWS PO.

(3 x 4 **= 12 weightage)**