IMCA – 32

III Semester Int. M.C.A. Examination, February/March 2010
OPERATING SYSTEMS

Time: 3 Hours Max. Marks: 100

Instructions: *1) Answer **all** questions in Part – **A**, **5** questions out of 8 in Part – **B**, and **4** questions out of 6 in Part – **C**.*
*2) PART – **A**: Questions from **1 to 8** carry **1** mark **each** and **9 to 14** carry **2** marks **each**.*
*3) PART – **B**: **Each** question carries **8** marks.*
*4) PART – **C**: **Each** question carries **10** marks.*

PART – A

I. Answer **all** questions. **Each** question carries **1** mark. **(1×8=8)**

1) Define Operating System.
2) What is Command Interpreter ?
3) What is PCB ?
4) Explain semaphores.
5) What are bad blocks ?
6) Define Deadlock.
7) What is File System Mounting ?
8) Which command is used in UNIX for copying files ? Give syntax.

II. Answer **all** questions. **Each** question carries **2** marks. **(2×6=12)**

9) With a neat diagram write the different process states.
10) Explain the types of schedulers.
11) What is dynamic loading ?
12) Differentiate process and thread.
13) Explain Sequential Access method.
14) Explain first fit, best fit and worst fit.

P.T.O.

PART – B

III. Answer **any 5** questions. **Each** question carries **8** marks. **(8×5=40)**

15) List the types of Operating System and explain them.

16) Explain the producer-consumer problem.

17) What is Fragmentation? Explain the different types of Fragmentation.

18) What is Thrashing? What is the cause for Thrashing ?

19) Explain any two directory structures.

20) For the following reference string: 7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1 with frame size 3, how many page faults occur in optimal page replacement and LRU page replacement algorithm.

21) Explain Bankers Algorithm.

22) Explain the concept of user authentication.

PART – C

IV. Answer **any 4** questions. **Each** question carries **10** marks. **(10×4=40)**

23) Explain (i) Batch Processing (ii) Real time systems.

24) List the characteristics of Shortest Job First scheduling and Round Robin scheduling.

25) Differentiate between pre-emptive and non-preemptive scheduling.

26) Explain file access methods in detail.

27) What is disk scheduling? Explain the different disk scheduling algorithms.

28) Consider the page reference string 1 2 3 4 2 1 5 6 1 2 3 7 6 3 2 3 6
How many page faults would occur considering three and four frames using

i) LRU replacement

ii) FIFO replacement

iii) Optimal page replacement.

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