K17P 0234

Reg. No. : ....

Name : ....

First Semester M.C.A. Degree (Reg./Suppl./Imp.) Examination, Jan. 2017
(2014 Admn. Onwards)
MCA1C03 : OPERATING SYSTEMS

Time : 3 Hours   Max. Marks : 80

Instructions : 1) *Section – A : Answer ten questions, each question carries*
   ***three** marks.*
2) *Section – B : Answer all questions, **each** question carries*
   ***ten** marks.*

SECTION – A

Answer **any ten** questions, each question carries **three** marks.   (10×3=30)

1. Define operating system, what are the characteristic features of modern operating system ?

2. What is virtual machine, how it is differ from normal machine structure ?

3. Discuss the layer structure of operating system.

4. Define process and corresponding states.

5. What are the tasks of process control block ?

6. What are the differences between short term, medium term and long term scheduling ?

7. Distinguish between internal and external fragmentation.

8. What is the need for page replacement ?

9. Define deadlock, what are the demerits of deadlock ?

10. What is a file system, which are some of the popularly used file systems ?

11. What are the design issues of the distributed systems ?

12. What are the issues of process migration ?

SECTION – B

Answer all questions, each question carries ten marks.   (5×10=50)

13. a) i) Explain the various operating system services.   5
        ii) Discuss the different system calls, their functions.   5

        OR

    b) What are the significant features of virtual machine and non-virtual machine ?   10

14. a) i) Discuss the methods to prevent deadlocks in a systems.   5
        ii) Compare and contrast pre-emptive and non-pre-emptive scheduling.   5

        OR

    b) i) Describe multilevel feed back queue scheduling algorithm.   5
        ii) Explain how hardware instructions can be used to solve critical section
             problem.   5

15. a) Describe paging and segmentation with suitable examples.   10

        OR

    b) Explain the page swapping situation in demand page allocation.   10

16. a) Mention the benefits of spooling, how spooling is feasible for all types of I/O
        devices, explain briefly.   10

        OR

    b) Define mutual exclusion, how semaphores can be used to obtain mutual
        exclusion, discuss briefly.   10

17. a) Discuss the various protection and security measures taken to protect the
        system in the design of operating system.   10

        OR

    b) i) What are the goals and principles of protection ?   5
        ii) Compare and contrast program and system threats in distributed operating
             system.   5

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