(b) What are factors that help in selection of a disk scheduling algorithm ? 4

9. (a) Explain the components of memory management in Linux system. 8

(b) What do you mean by Kernel ? Explain its relation with shell. 8

Roll No. .....

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MCA 3rd Semester Current Scheme (with new notes)

Examination – December, 2016

OPERATING SYSTEMS

Paper : MCA-302

Time : Three Hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Question No. 1 (Unit-I) is ***compulsory***. Attempt ***one*** question each from Unit II to Unit V. All questions carry equal marks.

UNIT – I

1. (a) Define Operating System.

(b) Define System Calls.

(c) What is paging. What is its use ?

(d) What do you mean by Client and Server ?

(e) Give ***two*** uses of Monitors.

(f) Define Thrashing.

(g) What do you mean by Shell ?

(h) Define Micro Kernel.

UNIT – II

2. (a) What is Distributed Operating System ? Explain characteristics of operating system. 8

(b) Explain various Operating System Services. Differentiate Real Time System with Time Shared System. 8

3. (a) Define Scheduling. Why dispatcher is necessary in scheduling ? Explain Multiple Process Scheduling Criteria with the help of block diagram. 8

(b) Differentiate between a process and a thread. Which are possible operations that can be performed on thread ? 8

UNIT – III

4. (a) Explain the concept of Logical versus Physical Address Space with reference to memory management. Also illustrate contiguous allocation. 8

(b) What is demand paging ? Give one page replacement algorithm. 8

5. Explain : $4 \times 4 = 16$

(a) Segmentation

(b) Demand Paging

(c) Page Replacement

(d) Allocation of frames

UNIT – IV

6. (a) Explain the concept of Free Space Management. What do you understand by Directory Management ? 10

(b) What do you understand by Semaphores ? Illustrate their use. 6

7. (a) Explain synchronization methods. What are the criteria of evaluating critical section problem ? 8

(b) Why Semaphores needs in Process Management ? How it acts in Critical Regions ? 8

UNIT – V

8. (a) How can you detect the deadlocks ? Explain two methods to prevent deadlocks. 12