

- (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

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67142

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

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

5. Explain : 4 × 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

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P. T. O.