# CBCS SCHEME

**16/17MCA24**

## Second Semester MCA Degree Examination, June/July 2019
## Operating Systems

Time: 3 hrs.  Max. Marks: 80

**Note:** *Answer FIVE full questions, choosing ONE full question from each module.*

### Module-1

1  a. Define operating system, its goals and also discuss the services of operating system.
   **(10 Marks)**
   b. Write short notes on : i) multiprocessor systems  ii) multi–programmed systems.  **(06 Marks)**

**OR**

2  a. Explain the process states and its state transition with a neat diagram.  **(08 Marks)**
   b. What are the various components of operating system and discuss any 4 in detail.  **(08 Marks)**

### Module-2

3  a. What do you mean by system calls with a diagram, explain the types of system call. **(08 Marks)**
   b. What are the different multithreading models, explain it is detail with necessary diagram.
   **(08 Marks)**

**OR**

4  a. Explain any 2 scheduling algorithms.  **(08 Marks)**
   b. Discuss in detail about readers writers problem and write the pseudo code.  **(08 Marks)**

### Module-3

5  a. What do you mean by deadlock? What are the four necessary conditions for a deadlock to occur?  **(06 Marks)**
   b. What do you mean by demand paging? Discuss the procedure for handing the page fault.
   **(10 Marks)**

**OR**

6  a. Discuss in detail about paging techniques and discuss about the structure of the page table.
   **(08 Marks)**
   b. Consider the following page reference string
      7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1
      How many page faults occur for the FIFO algorithm with 3 page frames?  **(08 Marks)**

### Module-4

7  a. Explain various file access methods.  **(10 Marks)**
   b. Short notes on thrashing.  **(06 Marks)**

**OR**

8  a. Explain different file allocation methods in detail.  **(10 Marks)**
   b. Discuss in detail about file–system structure.  **(06 Marks)**

### Module-5

9  a. Discuss about process management is LINUX operating system.  **(10 Marks)**
   b. Various file system types in LINUX.  **(06 Marks)**

**OR**

10  Write short notes on :
   a. Boot block
   b. Inter process communication
   c. Fragmentation
   d. Segmentation.  **(16 Marks)**

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