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**BCMCAV 155**

**Credit Based Second Semester B.Com. Degree Examination, May/June 2016**  
**COMPUTER APPLICATION (Vocational)**  
**Paper – IV : Operating Systems and Linux**  
**(Common to all Batches)**

Time : 3 Hours

Max. Marks : 80

**PART – A**

**Note** : Answer any ten questions from Part A.

**(10×2=20)**

1. a) Define process control block.
- b) What do you mean by the term safe state ?
- c) Give the syntax of mkdir command with example.
- d) Define page fault.
- e) Mention different types of operating system.
- f) What do you mean by aging ?
- g) What is spooling ?
- h) Differentiate between logical and physical address space.
- i) Define Thrashing.
- j) Differentiate waiting time and throughput.
- k) Give commands to add and delete a user.
- l) Give the meaning and syntax of grep command.

**P.T.O.**



## PART – B

**Note :** Answer **any one full** question from **each** Unit of Part – B.

## Unit – I

2. a) Draw the process state diagram and explain the various states of a process.  
b) Explain I/O system management and process management.  
c) Write a note on threads. (5+5+5)
3. a) Explain the contents of PCB.  
b) Explain any five operating services.  
c) Explain different types of schedulers. (5+5+5)

## Unit – II

4. a) Explain readers writers problem.  
b) What are the necessary conditions for deadlock situation to occur ?  
c) Write a note on semaphores. (5+5+5)
5. a) Explain deadlock prevention.  
b) What is Banker's algorithm ? Explain the data structures involved in Banker's algorithm.  
c) Explain shortest Job First Scheduling (SJF) algorithm with example. (5+5+5)

## Unit – III

6. a) Explain tree structured directory.  
b) Write a note on access methods.  
c) Explain optimal page replacement algorithm with example. (5+5+5)
7. a) With a neat diagram explain the concept of paging.  
b) Given 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, with 3 frames of memory.  
Write the steps of FIFO algorithm which shows the occurrence of page fault.  
c) Explain segmentation with example. (5+5+5)



**Unit – IV**

8. a) Write a note on positional parameters in linux.  
b) Explain if statement with syntax and example.  
c) Explain the following commands with example
- a) sort
  - b) chmod
  - c) cut. (4+5+6)
9. a) Explain the looping construct in Linux operating system with example.  
b) Write a note on file access permissions in Linux.  
c) Explain different versions of cat command with examples. (5+5+5)
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