Reg. No. | | | | | | | | | |

BCACAC 211

Credit Based Third Semester B.C.A. Degree Examination, Oct./Nov. 2017
(Common to all Batches)
OPERATING SYSTEM

Time : 3 Hours

Max. Marks : 80

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

PART – A

1. a) Distinguish between program and process. **(10×2=20)**
   b) Define PCB. Mention the components of PCB.
   c) Define the terms throughput and response time.
   d) What is a critical section ? Name the requirements for solution to the critical section problem.
   e) What are semaphores ?
   f) Define deadlock.
   g) Differentiate logical address over physical address.
   h) Name the different attributes of a file.
   i) What is swapping ?
   j) Write the use and syntax to add and delete a user in Linux.
   k) List relational operators of Linux.
   l) Differentiate the wild card characters used in Linux.

PART – B

Unit – I

2. a) Explain the service provided by operating system.
   b) Explain process State Transition with a neat diagram.
   c) Discuss FCFS and SJF CPU scheduling policies with example and also compare the same. **(6+4+5)**

3. a) Explain any three system components of operating system.

   b) Explain the following :

      i) Multiprogramming System.

      ii) Time Sharing System.

   c) Explain the concept of process scheduling using queuing diagram. **(5+6+4)**

Unit – II

4. a) What is readers-writers problem ? Explain.

   b) Explain the necessary conditions for a deadlock to occur.

   c) Explain the resource allocation algorithm in Banker's algorithm. **(5+4+6)**

5. a) Write a note on resource allocation graph.

   b) Explain deadlock prevention method.

   c) Explain dining philosophers problem. **(6+4+5)**

Unit – III

6. a) 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 would occur for the following replacement algorithm assuming three frames ?

      i) LRU algorithm.

      ii) Optimal replacement algorithm.

   b) Write a short note on fragmentation.

   c) Explain two level directory structure of a directory. **(6+4+5)**

7. a) Explain FIFO page replacement algorithm with example.

   b) With a neat diagram explain paging.

   c) Explain any five operations on file. **(5+5+5)**

Unit – IV

8. a) Explain different IF statement in Linux with syntax and example.
   b) Explain any four file oriented commands in Linux.
   c) What are different types of file permissions ? Explain how they can be changed using the chmod command.
   d) Give the syntax and explain while loop with an example. **(3+4+5+3)**

9. a) Give the syntax and explain the case statement with an example.
   b) Explain the features of UNIX operating system.
   c) Explain following commands.
      i) Sort
      ii) Wc
      iii) Date
   d) List and explain any four directory oriented commands with syntax and example. **(4+4+3+4)**