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

BCACAC 211

Credit Based Third Semester B.C.A. Degree Examination, Nov./Dec. 2018
(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) What is a process ? How it is different from a program ? **(10×2=20)**
   b) List any four services of O.S.
   c) What is PCB ? List the components of PCB.
   d) What is starvation ?
   e) What is thrashing ?
   f) What is race condition ?
   g) What is a wait for graph ?
   h) Define virtual memory.
   i) Differentiate between logical and physical address.
   j) List out any four file types with extensions.
   k) What is the purpose of cat command in Linux ?
   l) Give the syntax to add and delete a user in Linux.

PART – B

Unit – I

2. a) Explain process state transition with a neat diagram.
   b) Explain any three system components of operating system.

P.T.O.

c) Consider the following set of processes, their arrival time and CPU burst time given in milliseconds.

Process	Arrival time	Burst time
P_1	0	8
P_2	1	4
P_3	2	9
P_4	3	5

Draw Gantt chart and find average waiting time using preemptive SJF scheduling. **(4+6+5)**

3. a) Explain the concept of process scheduling using queuing diagram.
   b) Write a short note on :
      i) Batch process system
      ii) Multiprogramming system.
   c) Explain priority scheduling algorithm with an example. **(4+6+5)**

Unit – II

4. a) What is a semaphore ? Explain wait and signal operations with pseudo code.
   b) What is dead lock ? Explain how can we recover from deadlocks situation.
   c) Explain resource allocation graph with an example. **(5+5+5)**
5. a) What is critical section problem ? What are the requirements for solutions to critical section problem ?
   b) What is dining philosophers problem ? Explain.
   c) List and explain necessary conditions for deadlock to occur. **(5+5+5)**

Unit – III

6. a) Explain FIFO page replacement algorithm with an example.
   b) What is paging ? Explain with an example.
   c) What is fragmentation ? Explain. **(6+5+4)**

7. a) Write a note on :
   i) Direct file access
   ii) Sequential file access.
   b) Explain any five operations on files.
   c) Explain the concept of swapping with neat diagram. (6+5+4)

Unit – IV

8. a) Explain the features of Unix operating system.
   b) Explain any two iterative statements in Linux with syntax and example.
   c) Explain any five file oriented commands in Linux. (5+5+5)

9. a) Explain the Linux file system with a neat diagram.
   b) Explain the case statement with syntax and example.
   c) Explain any five process oriented commands available in Linux. (5+5+5)