Q.P.CODE:12564

Fifth Semester B.C.A Degree Examination

April/May - 2019

(2016-17 New Scheme)

(BCE 440) OPERATING SYSTEM

Time : 3 Hours Max. Marks : 80

I. Answer all the following questions: 1x5=5

1. Define Operating System.
2. Define sequential processing.
3. Expand FCFS.
4. What is paging?
5. Define file.

II. Answer any Five full questions: 5x15=75

6. a) Explain batch processing operating system with an example. **5**
   b) Explain real time embedded systems and multimedia systems. **5**
   c) Write about open source operating system. **5**

7. a) Draw Queuing diagram / representation of process scheduling & explain various Queues & Schedules. **5**
   b) With a neat diagram explain the process control block **5**
   c) Explain the two operations done on process. **5**

8. a) Solve the following with Gantt Chart.

	Burst time	Arrival time	Priority
P_0	20	0	4
P_1	22	1	3
P_2	25	2	2
P_3	27	3	1

   (i) FCFS (ii) Priority (iii) Round Robin CPU Scheduling algorithm **5**
   b) Explain the multilevel and multilevel feed back queue scheduling. **5**
   c) (i) What is preemptive and Non preemptive CPU scheduling?
   (ii) Define response time and turn around time. **3**

9. a) Explain the deadlock characterization. **5**

   b) How dead lock can be recovered? Explain two options for recovering dead lock. **5**

   c) Consider the following snapshot of the system and answer following questions using Bankers algorithm. **5**

      a) Find the need of the allocation?

      b) Is the system in safe state?

Process	Allocation				Max				available			
	A	B	C	D	A	B	C	D	A	B	C	D
P_1	0	0	1	2	0	0	1	2	1	5	2	0
P_2	1	0	0	0	1	7	5	0				
P_3	1	3	5	4	2	3	5	6				
P_4	1	6	3	2	0	6	5	2				
P_5	0	0	1	4	0	6	5	6				

10. a) Explain contiguous memory allocation **5**

    b) Write a note an Fragmentation. **5**

    c) With an example explain any two page replacement algorithm. **5**

11. a) Describe disk access methods. **5**

    b) Explain shortest seek first disk scheduling and C-scan disk scheduling algorithm for the following Queue. **5**

    95, 180, 34, 119 11, 123, 62, 64, with initially at track 50 and ending at 199 calculate number of moves.

    c) Explain file operations and file attributes. **5**

12. a) Explain the 2 level and tree level directory structure. **5**

    b) Write a note on free space management. **5**

    c) Write a note on file allocation methods. **5**

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