(1108)

B.C.A. UG (CBCS) RUSA Vth Semester Examination

4215

OPERATING SYSTEM

BCA-0501　　6161680017

Time : 3 Hours]　　　　　　　　[Maximum Marks : 70

Note :– Q. No. 1 Part A is compulsory. Select *one* question from each Part B, C, D and E.

Part–A

(Compulsory Question)

1. (A) Objective Type Questions.

　　(i)　The systems which allows only one process execution at a time, are called :

　　　　(a)　Uniprogramming systems

　　　　(b)　Uniprocessing systems

　　　　(c)　Unitasking systems

　　　　(d)　None of the mentioned

MC–674　　　　　　　(1)　　　　　　Turn Over

(ii) Scheduling is done so as to :

   (a) Increase CPU utilization

   (b) Decrease CPU utilization

   (c) Keep the CPU more idle

   (d) None of these

(iii) Round robin scheduling falls under the category of :

   (a) Non-preemptive scheduling

   (b) Preemptive scheduling

   (c) None of these

   (d) Both (a) and (b)

(iv) To avoid deadlock :

   (a) There must be a fixed number of resources to allocate

   (b) Resource allocation must be done only once

   (c) All deadlocked processes must be aborted

   (d) Inversion technique can be used

(v) Turnaround time is :

   (a) The total waiting time for a process to finish execution

   (b) The total time spent in the ready queue

   (c) The total time spent in the running queue

   (d) The total time from the completion till the submission of process

(vi) Run time mapping from virtual to physical address is done by :

   (a) Memory management unit

   (b) CPU

   (c) PCI

   (d) None of the mentioned

(vii) The segment base contains the :

   (a) Starting logical address of the process

   (b) Starting physical address of the segment in memory

(c) Segment length

(d) None of these

(viii) Virtual memory is normally implemented by ....

(a) Demand paging

(b) Buses

(c) Virtualization

(d) All of these

(ix) The only state transition that is initiated by the user process itself is :

(a) Block   (b) Wakeup

(c) Dispatch   (d) None of these

(x) The data structure used for file directory is called :

(a) Mount table

(b) Hash table

(c) File table

(d) None of these   1×10=10

(B) Short Answer Type Questions :

(i) Operating system act as a resource manager. Justify.

(ii) What are the main reason for process suspension ?

(iii) Difference between static and dynamic memory allocation.

(iv) What is virtual memory ?

(v) Discuss free space management.   4×5=20

Part–B

(Unit–I)

2. Explain multiprogramming and multiuser operating system with example.

3. Describe the general roles of an operating system and elaborate why these roles are important.   10

Part–C

(Unit–II)

4. For the processes given in the table below, find out average waiting time, average turnaround time and average throughput using FCFS, SJF :

Process	Arrival time	CPU Burst
P1	0	12
P2	1	5
P3	2	9
P4	3	7

5. Define deadlock with real life example. What are the necessary condition for dead lock occur ?   10

Part–D

(Unit–III)

6. What are memory management schemes ? Explain fixed and dynamic partitioning.

7. Write short notes on the following :

   (a) Swapping

   (b) Advantage and disadvantage of demand paging 5,5

Part–E

(Unit–IV)

8. What are the various allocation methods ? Which allocation method is best and why ?

9. What is directory system ? Discuss tree structured directory system. What are its advantages over two-level directory system ?   10

Paging
Segmented
Virtual memory
demand paging.

Mutual Exclution No premption.
Hold and wait Circular wait