

Total No. of Questions : 9] [Total No. of Printed Pages : 7
(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

MC-674

(3)

Turn Over

MC-674

(2)

- (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.

MC-674

(6)

Paging
Segmented
Virtual memory
demand paging.

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

MC-674

(7)

Mutual Exclusion No preemption.
Hold and wait Circular wait