BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – Dip.CSE-2022/Dip.CSE-2023
Course Name – Operating Systems
Course Code - DCSE-PC303
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) Choose the number of necessary condition for deadlock to Occur:
a) 1 b) 2
c) 5 d) 4

(ii) Identify the conditions that must be satisfied to solve the critical section problem
a) Mutual Exclusion b) Progress
c) Bounded Waiting d) All of the mentioned

(iii) Identify the objective of multiprogramming
a) Have a process running at all time b) To increase CPU utilization
c) Have multiple programs waiting in a queue ready to run d) None of these

(iv) Define the degree of multiprogramming.
a) the number of processes executed per unit time b) the number of processes in the ready queue
c) the number of processes in the I/O queue d) the number of processes in memory

(v) Select the devices that I/O hardware contains
a) Bus. b) Controller.
c) I/O port and its registers. d) All of the these

(vi) Identify Booting means
a) Restarting a computer b) Shutting down
c) Removing error d) Installing program

(vii) Identify the term that is used by BIOS
a) By operating system b) By compiler
c) By interpreter d) By application software

(viii) Select another name of Preemptive Shortest Job First scheduling
a) Fast SJF scheduling b) EDF scheduling – Earliest Deadline First

c) HRRN scheduling – Highest Response Ratio Next
d) SRTN scheduling – Shortest Remaining Time Next

(ix) Select the deadlock avoidance algorithm

a) Elevator algorithm
b) Bankers algorithm
c) Round-robin algorithm
d) None of these

(x) Select the scheduling algorithms that gives best average waiting time

a) FCFS
b) Priority
c) Round-robin
d) SJF

(xi) Select the name that cannot be scheduled by the kernel

a) Kernel level thread
b) User level thread
c) Process
d) None of these

(xii) Identify the name of the algorithm that uses time quantum

a) Round robin scheduling algorithm
b) Shortest job scheduling algorithm
c) Priority scheduling algorithm
d) Multilevel queue scheduling algorithm

(xiii) Select the activity that is done after termination of a process

a) It is removed from all queues
b) It is removed from all, but the job queue
c) Its process control block is de- allocated
d) Its process control block is never de-allocated

(xiv) Determine the state that is not a part of the life cycle of a Process

a) New
b) Waiting
c) Old
d) Running

(xv) Select the size of a page that is typically known as

a) Varied
b) Power of 4
c) Power of 2
d) None of these

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Describe the different types of operating systems (3)
3. Explain the concept of thread scheduling in an operating system. (3)
4. State the difference between multiprogramming and multitasking (3)
5. Explain the working principle of process scheduling. (3)
6. Illustrate fragmentation,external fragmentation,internal fragmentation. (3)

OR

Write the importance of disk scheduling in an operating system. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Discuss Kernel-Level and User-Level threads. (5)
8. Explain advantages of Cooperating Process in Operating System (5)
9. Compare Logical Address Space and Physical Address Space in an Operating Systems. (5)
10. Reframe the concept of Paging with Segmentation as a memory management technique. (5)
11. Discuss the concept of Spooling in Operating System (5)
12. Reframe the importance of Translation Look-Aside Buffer(TLB) in Memory Management. (5)

OR

A disk drive has 200 cylinders numbered 0 to 199. The current position of disk arm is 50. The queue of pending requests in FIFO order is 88,150,44,172,31,15,195 . Evaluate the average movements for FIFO algorithm (5)

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