



QP CODE: 26802013



26802013

Reg No :

Name :

INTEGRATED M Sc DEGREE EXAMINATION APRIL 2026

Second Semester

CORE - ICSC2CR4 - OPERATING SYSTEMS

INTEGRATED MSc COMPUTER SCIENCE - ARTIFICIAL INTELLIGENCE & MACHINE
LEARNING, INTEGRATED MSc COMPUTER SCIENCE - DATA SCIENCE

2020 Admission Onwards

05A72079

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

Weight 1 each.

1. Discuss operating system operations.
2. What are the basic components of GUI?
3. What are the different states of a process?
4. What is waiting time? Formula for calculating waiting time.
5. Explain Algorithm 1 in Two-Process solution.
6. When can we say that a system is in safe state?
7. What is virtual memory?
8. What is page fault?
9. What are the different file access methods?
10. What are the file allocation methods? Name the fragmentation suffered by contiguous allocation method.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

Weight 2 each.

11. Explain time sharing and real time operating systems.
12. Explain major CPU registers in PCB.
13. What is Multithreading? Give examples of Multithreading operating System.





14. Explain critical section and 3 solutions to critical section problems?
15. Explain binary semaphores?
16. Consider a logical address space of 64 pages of 1024 words of each mapped onto a physical memory of 32 frames. a)How many bits are there in the logical address? b)How many bits are there in the physical address?
17. What is multilevel paging?
18. Explain the different operations that can be performed on a directory.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

Weight 5 each.

19. Explain 5 major functions of OS.
20. Explain process management.
21. Explain synchronization hardware.
22. Given six memory partitions of 300KB,600KB,350KB,200KB,750KB and 125KB(in order),how would the first-fit,best-fit and worst-fit algorithms place processes of size 115KB,500KB,358KB,200KB and 375KB(in order)? Rank the algorithms interms of how efficiently they use memory.

(2×5=10 weightage)

