

Mid-West University
Examinations Management Office

Semester End Examination 2080

Bachelor level/ B. Sc. (CSIT)/ 4th Semester

Time: 3 hours

Subject: Operating System (COM441)

Full Marks: 60

Pass Marks: 30

Candidates are required to give their answers in their own words as far as practicable. Figures in the margins indicate marks.

Group A

Very short answer questions (attempt *all*). [8x2 = 16]

1. What is the role of operating system in computer system?
2. Define protection and security feature of operating system.
3. What do you mean by CPU scheduling?
4. Define waiting state of process with example.
5. What is the use of semaphores?
6. When does page replacement needed?
7. What is the difference between block devices and character devices?
8. Discuss demand paging in brief.

Group B

Short answer questions (attempt *any five*). [5x4 = 20]

9. Explain abstract view of computer system.
10. Why operating system is called bridge between hardware and user? Justify with example.
11. Explain key characteristics of threads.
12. Write short notes on:
 - a. Round-Robin Scheduling
 - b. Thrashing
13. Why backup is needed? Explain stable-storage implementation strategy?
14. Explain the procedure of deadlock detection and recovery from deadlock.

Group C

Long answer questions (attempt *any three*). [3x8 = 24]

15. What is kernel? Explain monolithic system and microkernel with their advantages and disadvantages.
16. What are the major issues in IPC? Briefly explain race condition and critical region with example.
17. What do you mean by file access methods? Explain various space allocation methods.
18. Why SSD is faster than HDD? Explain various disk scheduling algorithm with appropriate example.

The End