

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF SCIENCE AND ENGINEERING
DEPARTMENT OF COMPUTER SCIENCE
BSc HONS DEGREE IN COMPUTER SCIENCE
BSc HONS DEGREE IN NETWORK ENGINEERING
BSc HONS DEGREE IN SOFTWARE ENGINEERING
CS111/NWE112/SWE111/OPERATING SYSTEMS CONCEPTS

DURATION 3 HOURS Total marks is 100

Instructions to candidates:

Answer all questions

NOV 2024

Question 1

- a. Define the following :
 - i. Process Scheduler [2]
 - ii. Process [2]
- b. State three the characteristics of a good process scheduler. [6]
- c. Explain time slicing. How its duration affects the overall working of the system. [6]
- d. Explain pseudo parallelism. [2]
 - i. Describe the process model that makes parallelism easier to deal with. [6]

Question 2

- a. Differentiate NTFS and FAT file systems. [2]
- b. Explain why would one use safe mode as a booting option [2]

- c. Explain what the following commands do.
 - i. fixmbr [2]
 - ii. chkdsk [2]
- d. Explain the three conditions that must be met for mutual exclusion to occur. [6]
- e. Define spooling [2]
 - i. Explain why a printer spooling system is better than direct user access to printers [4]

Question 3

- a. Explain the differences between segmentation and paging. [4]
- b. Give a detailed definition of swapping. [2]
- c. Determine the sequence of execution of processes for each of the following scheduling algorithms.
 - i. First Come First Served. [5]
 - ii. Shortest Job First. [5]

Process/Arrival Time/Execution time/Burst Time

1	0	14	14
2	2	12	14
3	5	10	15
4	7	4	11
5	19	7	26

Question 4

- a. With aid of a diagram illustrate the Linux file structure. [10]
- b. The operating system must allocate and deallocate various resources for each active process. Name and explain five resources. [10]

Question 5

- a. Name and explain three types of processor scheduling. [6]

- b. List the five major activities of an operating system in regard to process management [5]
- c. Define the term interrupt [1]
- d. Give a brief description of the four classes of interrupts [8]

*****END OF EXAMINATION*****