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Reg. No.

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IV Semester B.Sc. Degree Examination, September/October - 2022

COMPUTER SCIENCE - IV

Operating System and Unix

(CBCS Scheme)



Time : 3 Hours

Maximum Marks : 70

*Instructions to Candidates :*

Answer all the Sections

## SECTION - A

I. Answer any 10 questions. Each question carries 2 marks. (10 × 2 = 20)

- 1) Define operating system? Mention different types of operating system.
- 2) What is process scheduling?
- 3) Define semaphore.
- 4) What are the necessary conditions for deadlock?
- 5) What is memory management?
- 6) What is thrashing?
- 7) What is a shell ? Mention different types of shell.
- 8) Write any two features of unix.
- 9) What is meant by I/O redirection?
- 10) What is Grep command? Give an example.
- 11) Write the syntax of for loop with an example.
- 12) Differentiate between break and continue statement.

## SECTION- B

II. Answer any 5 questions. Each question carries 10 marks. (5 × 10 = 50)

- 13) a) Explain different functions of operating systems.
- b) Briefly explain the structure of operating system. (5+5)

[P.T.O.]



- 14) a) Define process. Explain process state transition with a diagram.  
b) Explain shortest - Job First (SJF) Scheduling algorithm with an example. (5+5)
- 15) a) Explain Deadlock detection algorithm with an example.  
b) Define critical section problem. Explain the requirements of critical section problem (5+5)
- 16) a) Write a short note on paging.  
b) What is optimal page replacement algorithm? Explain with the help of following example. (Take Four page frames) 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2 (4+6)
- 17) a) Explain the architecture of unix system.  
b) Explain the structure of unix file system. (5+5)
- 18) a) What are the different modes of setting file permission ? Explain with examples.  
b) Explain any 5 filter commands with examples. (5+5)
- 19) a) What is regular expression in UNIX? Explain.  
b) Write a shell script to reverse a number. (5+5)
- 20) a) Explain Decision Making statements in Unix with examples.  
b) Write a shell script to count the number of vowels in a given string. (5+5)
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