

**BACHELOR OF COMPUTER APPLICATIONS
(BCA) (Pre-Revised)**

Term-End Examination

June, 2019

00602

CS-63 : INTRODUCTION TO SYSTEM SOFTWARE

Time : 2 hours

Maximum Marks : 60

*Note : Question number 1 is compulsory. Attempt any
three questions from the rest.*

-
-
1. (a) Explain the conditions for a deadlock to occur ? Also explain a deadlock avoidance algorithm with an example. 10
- (b) Write and explain UNIX commands for the following : 5×2=10
- (i) To count the number of characters in a file
 - (ii) To compare two files
 - (iii) To change current working directory
 - (iv) To display current date and time
 - (v) To display the list of users logged in at a time.
- (c) What is a semaphore ? What is mutual exclusion ? How does semaphore solve the problem of mutual exclusion ? Explain. 10

2. (a) Explain the process of handling page fault in virtual memory. 5
- (b) What is a compiler ? Explain the process of compilation of a program with the help of an example. 5
3. (a) For the following set of processes and units of time, calculate the average waiting time for the processes for FCFS and SJF scheduling algorithms. 5

<u>Process</u>	<u>CPU Time</u>
P1	5
P2	10
P3	8
P4	3

- (b) Explain the MS-Windows Graphical User Interface (MS-Windows GUI) with the help of a diagram. 5
4. (a) What is an inode in UNIX file system ? Explain the directory structure in UNIX. 5
- (b) Explain the use of symbol table and parse tree in the context of lexical and syntax analysis with the help of an example. 5

5. Explain the following with the help of an example/diagram, if needed. 10

- (a) Loader
 - (b) Assembler
 - (c) Disk space management
 - (d) Shell programming
-