No. of Printed Pages : 3

CS-63

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

Term-End Examination

June, 2017

01491

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 phases of compiler design. Give suitable diagrams. Also construct a context-free grammar for if-then and if-then-else statements. *8*

(b) Write a shell program to enter a number and find its factorial. *7*

(c) Explain the concept of address translation through associative memory. Give suitable diagram. *5*

(d) Explain Semaphores. Give a solution to readers-writers problem using semaphores and explain. *5*

(e) Write UNIX commands for the following : $5 \times 1 = 5$

(i) To create a directory labelled ABC.

(ii) To run a command several times.

(iii) To terminate the login session.

(iv) To change the permission of a file so that the user gets full permission (r, w, x).

(v) To get a formatted output.

2. (a) Distinguish between the following : $2 \times 2\frac{1}{2} = 5$

(i) Absolute loader and Relocating loader

(ii) Dynamic loading and Dynamic linking

(b) Explain the concept of page fault. Give a diagram and explain the steps in handling a page fault. 5

3. (a) Explain the contiguous allocation method of file allocation. How is it different from non-contiguous allocation method ? Give diagrams. 5

(b) Explain an algorithm to handle deadlock and to avoid it. What are the essential conditions for a deadlock to occur ? 5

4. (a) Give the features of ex, ed and vi editors. Give a short note on AWK. 5

(b) How is MS-Windows different from X-Windows environment ? Explain the architectures of both GUIs. 5

5. (a) Give an example of semantic analysis of an arithmetic expression. 5

(b) Explain scan scheduling algorithm with an example. 5