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CS-63

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

Term-End Examination

00200

December, 2017

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 concept of variable partition contiguous storage allocation. Also give suitable diagram. *8*

(b) Explain with the help of examples, FIFO and LRU page replacement algorithms. *7*

(c) Write a shell program to enter four numbers from user and to display the largest number. *5*

(d) What is a race condition ? Explain how a critical section avoids it. Give an example. *5*

(e) What is swapping ? Does swapping increase the operating system's overheads ? Justify your answer. *5*

2. (a) Draw and explain a simple schematic for managing dynamic storage allocation. 5

(b) What are the functions of passes used in a 2-pass assembler ? Explain pass-1 algorithm. 5

3. (a) Develop a regular expression for the following : 5×1=5

(i) Integer

(ii) Real number

(iii) Real number with optional fraction

(iv) Identifier

(v) Arithmetic expression

(b) Give the features of Lex and YACC. How does any general language processor development tool work ? Explain. 5

4. (a) Write UNIX commands for the following : 5×1=5

(i) Moving and renaming files

(ii) Setting an environment variable

(iii) Count characters, words, lines

(iv) Search file

(v) Displaying date

(b) Explain the components of major UNIX based GUIs. What is the key feature of X-Windows ? How is it different from other GUIs ? 5

5. (a) What is multi-level indexing and two-level indexing in file allocation ? Explain. *5*

(b) Give the functions of loaders and linkers. Also give suitable examples. *5*