NATIONAL BUSINESS COLLEGE

Assignment of BCA 2nd Semester

Session: 2022-25

'C' Language

Last date of Submission: - 20th June 2023

Answer all the questions: -

(1) Draw a flowchart and then write a c program to enter the roll number and marks of any four subjects of few students through the keyboard and write to a "student.dat" file.

(2) Write an algorithm and also a c program print-upper () to prints its character array argument in uppercase without using string.h header file.

(3) What is flowchart? Define the symbols used in flow charts. Also, discuss the advantages and disadvantages of flow chart.

(4) Explain the difference between parameter passing mechanism "call by value" and "call by reference". Which is more efficient and why?

(5) Write a program to find the length of a string using pointers? Describe the static variable with example.

(6) Develop a flowchart and then write a c program to display all prime numbers less than the number entered by the user.

(7) What is the role of indirection operator? How can we define and declare pointers in c language? Write a program in c language to demonstrate the concept of pointers in c.

(8) What is string? How can we declare and initialize a string variable? Explain with example the following string function.
(a) Strlen() (b) strcpy() (c) strcat() (d) strcmp() (e) strstr()

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Operating System

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Answer all the questions: -

(1) What is Directory? Describe its structure and also describe file allocation method. What is a threat? Describe various types of system or program threats and its preventive method.

(2) What is paging? What is demand paging? What is page fault? When does page fault occurs?

(3) What do you understand by safe and unsafe state? Explain Bankers algorithm with necessary data structure. Explain the strategies used for eliminating deadlocks.

(4) What are system calls? Give examples of system calls in any typical operating system. Describe the layered approach to W. S Design. Explain its advantages.

(5) What is the process scheduling mechanisms. Explain the types of process scheduling mechanism and their importance. Explain how process scheduling mechanism affects degree of multi-programming.

(6) With the diagram explain the disk structure. What are the different disk scheduling algorithm? Explain the merits and demerits of disk scheduling algorithm.

(7) What are deadlocks? What is the necessary condition to deadlock occur? Explain about the deadlock prevention methods.

(8) What is cache memory? Explain the cache read operations. Explain DMA with neat diagram.

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Computer Architecture

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Answer all the questions: -

(1) What is synchronous and asynchronous counter? What is virtual memory?
(2) What is the purpose of the main memory in a computer? What is non-volatile memory?
(3) Describe the parallel priority method of assigning priority to interrupts. Also, describe the match logic of associative memory.
(4) Explain RISC. Distinguish between RISC and CISC. Also, explain the disadvantages and advantages of Both.
(5) Explain how the J-K flip flop can be made to function as a D flip-flop and T flip-flop.
(6) Explain the Direct memory access mode of data transfer. Discuss the concept of carry lock ahead adder.
(7) Verify the two De-Morgans theorem by means of truth tables.
(8) Why NAND gate is called a Universal gate. Justify your answer construct logical equivalence of AND & OR using NOR gate.