BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

B. Tech. Sem - II COMPUTER SCIENCE & ENGINEERING : SUMMER : 2024

SUBJECT: LINEAR DATA STRUCTURES

Day : Monday
Date : 03/06/2024

S-24028-2024

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Assume suitable data **WHEREVER** necessary.
4) Draw neat labeled diagrams **WHEREVER** necessary.

Q.1 Write a menu driven program to display following operations on array **(10)**

i. create
ii. Search
iii. Insert
iv. Display

OR

Q.1 Explain importance of time complexity and space complexity of an algorithm with suitable example. **(10)**

Q.2 What is linked list? Write and Explain the algorithm for create and insert operations in doubly linked list with example. **(10)**

OR

Q.2 What is linked list? Explain its type with suitable diagram. **(10)**

Q.3 Write a function called 'push' that takes two parameters: an integer variable and a stack into which it would push this element and returns a 1 or 0 to show success of addition or failures. **(10)**

OR

Q.3 Write the prefix and postfix form for: A+B*(C-D)/(E-F) using stack. **(10)**

Q.4 What is Queue? Explain basic operations of Queue. **(10)**

OR

Q.4 Explain Priority Queue with example? **(10)**

Q.5 What are the advantages and disadvantages of various collision resolution strategies? **(10)**

OR

Q.5 Write an algorithm to implement selection sort with 24,36,74,18,5. **(10)**

Q.6 Explain different modes of opening a file in C using fopen() functions. Also write a C program to copy content of a file to another file. **(10)**

OR

Q.6 Explain basic file organization in detail. **(10)**

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