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Name

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Program

Bs (CS)

ID

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Course

Data Structures

Exam

Mid-Semester Assignment

9.

Q1)
a) Let the size of $A[]$ be 15654
and lower bound be 36767, calculate the upper bound.

Sol:

Given:

$$\text{size } A[] = 15654$$

$$lb = 36767$$

Required:

$$ub = ?$$

Sol:-

$$\text{AS size } A[] = ub - lb + 1$$

$$ub = \text{size of } A[] + lb - 1$$

$$ub = 15654 + 36767 - 1$$

$$\boxed{ub = 52,420} \quad \underline{\text{Ans}}$$

(3)

b) Suppose a list of 350 elements is to be sorted using Bubble Sort, then find:

i) Total Number of Passes.

ii) Total Number of steps.

iii) Number of steps in Passes # 137.

iv) Number of steps in Passes # 193.

Ans:

i) As, Number of Passes = $n - 1$
 $= 350 - 1 = 349.$

ii) As, Number of steps = $\frac{n(n-1)}{2} = \frac{350(350-1)}{2}$
 $= \frac{350(349)}{2} = 61,075$

iii) As, Number of steps in 137 = $n - \text{Passes No.}$
 $= 349 - 137 = 212$

iv) As, Number of steps in 193 = $349 - 193$
 $= 156$

Ans

(4)

Q49 Sort the given list using selection sort.

10, 15, 0, 7, 8, 6

Ans: Sol.:

Total $n = 6$.

Steps = $n - 1 = 6 - 1$

Step 1:

Element = 10

10, 15, 0, 7, 8, 6

Step 2:

0, 15, 10, 7, 8, 6

Step 3:

0, 6, 10, 7, 8, 15

Step 4:

0, 6, 7, 10, 8, 15

0, 6, 7, 8, 10, 15

Step 5:

10 is at proper position
list sorted.

(5)

Q#3

Fill in the blanks.

Ans:

i)

Physical

ii)

logical

iii)

data structure

iv)

no-linear

v)

linear

vi)

linear

vii)

8

viii)

file

ix)

Degree of record

x)

Blocking factor

6/0/25

6.

Handwritten text on lined paper, possibly a signature or name, consisting of several large, stylized letters that appear to be 'M', 'E', 'E', 'M', 'E', 'M'. The letters are written in a cursive, somewhat abstract style with multiple strokes and some overlapping.

Thank you
S/S