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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » **Problem Solving Through Programming In C (course)**

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Course outline

How does an NPTEL online course work? ()

Week 0 : ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Week 9 : Assignment 9

The due date for submitting this assignment has passed.

Due on 2023-09-27, 23:59 IST.

Assignment submitted on 2023-09-25, 20:45 IST

1) What is the worst case complexity of selection sort?   **1 point**

- a) O(nlogn)
- b) O(logn)
- c) O(n)
- ⦿ d) $O(n^2)$

Yes, the answer is correct.
Score: 1

Accepted Answers:
d) $O(n^2)$

2) What is the best case and worst case complexity of ordered linear search?   **1 point**

- a) O(nlogn), O(logn)
- b) O(logn), O(nlogn)
- c) O(n), O(1)
- ⦿ d) O(1), O(n)

Yes, the answer is correct.
Score: 1

Accepted Answers:
d) O(1), O(n)

3) Given an array arr = {12, 34, 47, 62, 85, 92, 95, 99,105} and key = 34; what are the   **1 point**
mid values (corresponding array elements) generated in the first and second iterations?

○ a) 85 and 12

◉ b) 85 and 34

○ c) 62 and 34

○ d) 62 and 47

Yes, the answer is correct.
Score: 1

Accepted Answers:
b) 85 and 34

4) When the Binary search is best applied to an array?   **1 point**

○ a) For very large size array

◉ b) When the array is sorted

○ c) When the array elements are mixed data type

○ d) When the array is unsorted

Yes, the answer is correct.
Score: 1

Accepted Answers:
b) When the array is sorted

5) Consider the array A[ ]= {5,4,9,1,3} apply the insertion sort to sort the array.   **1 point**
Consider the cost associated with each sort is 25 rupees, what is the total cost of the insertion
sort for sorting the entire array?

○ a) 25

○ b) 50

◉ c) 75

○ d) 100

Yes, the answer is correct.
Score: 1

Accepted Answers:
c) 75

6) Select the code snippet which performs unordered linear search iteratively?   **1 point**

◉
```
a)  int unorderedLinearSearch(int arr[], int size, int data)
    {
        int index;
        for(int i = 0; i < size; i++)
        {
            if(arr[i] == data)
            {
                index = i;
                break;
            }
        }
        return index;
    }
```

b) int unorderedLinearSearch(int arr[], int size, int data)

```
{
    int index;
    for(int i = 0; i < size; i++)
    {
        if(arr[i] == data)
        {
            break;
        }
    }
    return index;
}
```

c) int unorderedLinearSearch(int arr[], int size, int data)

```
{
    int index;
    for(int i = 0; i <= size; i++)
    {
        if(arr[i] == data)
        {
            index = i;
            continue;
        }
    }
    return index;
}
```

d) None of the above

Yes, the answer is correct.
Score: 1

Accepted Answers:

a) int unorderedLinearSearch(int arr[], int size, int data)

```
{
    int index;
    for(int i = 0; i < size; i++)
    {
        if(arr[i] == data)
        {
            index = i;
            break;
        }
    }
    return index;
}
```

7)   **1 point**

What will be the output?
```
#include<stdio.h>
#define func1(a,b) a > b ? b : a
#define func2(a,b); {temp=a;a=b;b=temp;}
int main()
{
    int a=3, b=5,temp;
    if((3+func1(a,b)) > b)
    func2(a,b);
    printf("%d %d", a,b);
    return 0;
}
```

○ a) 3 5

○ b) 3 0

○ c) 5 0

◉ d) 5 3

Yes, the answer is correct.
Score: 1

Accepted Answers:
d) 5 3

8) Consider an array of elements arr[5]= {5,4,3,2,1}, what are the steps of insertions   **1 point**
done while doing insertion sort in the array.

◉   a) 4 5 3 2 1
        3 4 5 2 1
        2 3 4 5 1
        1 2 3 4 5

○   b) 5 4 3 1 2
        5 4 1 2 3
        5 1 2 3 4
        1 2 3 4 5

○   c) 4 3 2 1 5
        3 2 1 5 4
        2 1 5 4 3
        1 5 4 3 2

○   d) 4 5 3 2 1
        2 3 4 5 1
        3 4 5 2 1
        1 2 3 4 5

Yes, the answer is correct.
Score: 1

Accepted Answers:
a) 4 5 3 2 1
    3 4 5 2 1
    2 3 4 5 1
    1 2 3 4 5

9)   What will be the output of the following C code?   **1 point**

```c
#include <stdio.h>
#if A == 1
   #define B 0
#else
   #define B 1
#endif
int main()
{
   printf("%d", B);
   return 0;
}
```

a) 0

b) 1

c) 01

d) None of the above

Yes, the answer is correct.
Score: 1

Accepted Answers:
b) 1

10)   **1 point**

What will be the output?

```c
#include <stdio.h>
#define a 10
int main()
{
  printf("%d ", a);
  int a=50;
  printf("%d ", a);
  return 0;
}
```

a) 10 10

b) 10 50

c) 50 50

d) Compilation error

Yes, the answer is correct.
Score: 1

Accepted Answers:
d) Compilation error