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msushilkumar27\_ec@mepcoeng.ac.in ✓

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 6 ()

Week 7 ()

Week 8 ()

## Week 9 : Assignment 9

The due date for submitting this assignment has passed.

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

Assignment submitted on 2023-09-26, 18:21 IST

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

1 point

- ☐ a)  $O(n \log n)$   
☐ b)  $O(\log n)$   
☐ 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)  $O(n \log n)$ ,  $O(\log n)$   
☐ b)  $O(\log n)$ ,  $O(n \log n)$   
☐ 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 mid values (corresponding array elements) generated in the first and second iterations? **1 point**

**Week 9 ()**

☐ Lecture 41:  
Substitution of  
# include and  
Macro (unit?  
unit=85&lesso  
n=86)

☐ Lecture 42:  
"search" as a  
function (unit?  
unit=85&lesso  
n=87)

☐ Lecture 43:  
Binary Search  
(unit?  
unit=85&lesso  
n=88)

☐ Lecture 44:  
Binary Search  
(Contd.) (unit?  
unit=85&lesso  
n=89)

☐ Lecture 45:  
Sorting  
Methods (unit?  
unit=85&lesso  
n=90)

☐ **Quiz: Week 9  
: Assignment  
9  
(assessment?  
name=260)**

☐ Week 9 :  
Programming  
Assignment 1  
(/noc23\_cs121  
/progassignment?  
name=262)

☐ Week 9 :  
Programming  
Assignment 2  
(/noc23\_cs121  
/progassignment?  
name=263)

☐ Week 9 :  
Programming  
Assignment 3  
(/noc23\_cs121  
/progassignment?  
name=264)

- ☐ 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;
}
```

☐ Week 9 :  
Programming  
Assignment 4  
(/noc23\_cs121  
/progassignment?name=265)

☐ Feedback  
Form of Week  
9 (unit?  
unit=85&lesson=266)

☐ Assignment 9  
Solution (unit?  
unit=85&lesson=92)

**Week 10 ()**

**Week 11 ()**

**Week 12 ()**

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Solving  
Session -  
July 2023 ()**

☐ 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 done while doing insertion sort in the array.

**1 point**

- ☒ 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

```
#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) What will be the output?

1 point

```
#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

