**Assignment on Data Structure and Algorithm**

**--------------------------------------------------------------------------------------------------------------------------**

1. See the below image of a binary search tree, and traverse it using all available methods −

What will the output after Inorder, Preorder and Postorder traversal?

Give the answer:

Inorder:10,14,19,27,31,35,42

Preorder:27,14,10,19,35,31,42

Postorder:19,10,14,31,42,35,27

1. Write the algorithm to generate Fibanacci series.

Give the answer:

-----0,1,1,2,3,5,8,13,21..........

1. What is Hashing? What do you mean by Collision? What are the different type of technique you know to avoid Collision? Explain in detail.

Give your Answer:

Hasing:

----This is a search techique for the element corresponding to given key value in a given list of items.

-----here items are not required to sort in sequential array patten.

-----key,offset,hashing function ,hashing index table are different component.

----two element can not occupy the same positon.

----different hashing function(modulus, truncation,folding,etc.)

Collision:

During hashing technique if two keys are produc same offset,this sitiation is know as collision.

How to avoid collision:

---chaining

---open addressing

Chaining:

---coalesced

---separate

Open addressing:

--liner probing;

----------record is stored in next empty position.

--------in this case item are stored in circular array.

--quadratic probing

--double hashing

1. How the array is different from Linked list? Give at least 5 points.

Give the answer:

----we can multiple items of same data type.

-----Items stored in contignous memory location.

-----data manipulation is complex.

----data access is sequential.

----size of the array has to be declared during programming

1. Select the code snippet which performs unordered linear search iteratively?

Options:

1. 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;

}

1. int unorderedLinearSearch(int arr[], int size, int data) {

int index;

for(int i = 0; i < size; i++) {

if(arr[i] == data) {

break;

}

}

return index;

}

1. 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;

}

1. int unorderedLinearSearch(int arr[], int size, int data) {

int index;

for(int i = 0; i < size-1; i++) {

if(arr[i] == data) {

index = i;

break;

}

}

return index;

}

Give the Answer: A