

## Theory Mid Term

### Question -7

```
vector<int>merge_sort(vector<int>a)
{
    if(a.size()<=1)
    {
        return a;
    }
    int mid=a.size()/2;
    vector<int>b;
    vector<int>c;
    for(int i=0; i<mid; i++)
    {
        b.push_back(a[i]);
    }
    for(int i=mid; i<a.size(); i++)
    {
        c.push_back(a[i]);
    }
    vector<int>sorted_b=merge_sort(b);
    vector<int>sorted_c=merge_sort(c);
```

Recursion Call Tree Diagram:

