

Data Structure Questions and Answers – Towers of Hanoi

1. The optimal data structure used to solve Tower of Hanoi is _____

- a) Tree
- b) Heap
- c) Priority queue
- d) Stack

Answer: d

Explanation: The Tower of Hanoi involves moving of disks 'stacked' at one peg to another peg with respect to the size constraint. It is conveniently done using stacks and priority queues. Stack approach is widely used to solve Tower of Hanoi.

2. Select the appropriate code for the recursive Tower of Hanoi problem.(n is the number of disks)

a)

```
public void solve(int n, String start, String auxiliary, String end)
{
    if (n == 1)
    {
        System.out.println(start + " -> " + end);
    }
    else
    {
        solve(n - 1, start, end, auxiliary);
        System.out.println(start + " -> " + end);
        solve(n - 1, auxiliary, start, end);
    }
}
```

b)

```
public void solve(int n, String start, String auxiliary, String end)
{
    if (n == 1)
    {
        System.out.println(start + " -> " + end);
    }
    else
    {
        solve(n - 1, auxiliary, start, end);
        System.out.println(start + " -> " + end);
    }
}
```

c)

```
public void solve(int n, String start, String auxiliary, String end)
{
    if (n == 1)
    {
        System.out.println(start + " -> " + end);
    }
    else
    {
        System.out.println(start + " -> " + end);
    }
}
```


