QUESTION SET

This set of Data Structure Multiple Choice Questions & Answers (MCQs) focuses on “Recursion”.

1. Recursion is a method in which the solution of a problem depends on \_\_\_\_\_\_\_\_\_\_\_\_  
a) Larger instances of different problems  
b) Larger instances of the same problem  
c) Smaller instances of the same problem  
d) Smaller instances of different problems

2. Which of the following problems can’t be solved using recursion?  
a) Factorial of a number  
b) Nth fibonacci number  
c) Length of a string  
d) Problems without base case

3. Recursion is similar to which of the following?  
a) Switch Case  
b) Loop  
c) If-else  
d) if elif else

4. In recursion, the condition for which the function will stop calling itself is \_\_\_\_\_\_\_\_\_\_\_\_  
a) Best case  
b) Worst case  
c) Base case  
d) There is no such condition

5. What will happen when the below code snippet is executed?

void my\_recursive\_function()

{

my\_recursive\_function();

}

int main()

{

my\_recursive\_function();

return 0;

}

a) The code will be executed successfully and no output will be generated  
b) The code will be executed successfully and random output will be generated  
c) The code will show a compile time error  
d) The code will run for some time and stop when the stack overflows

6. What is the output of the following code?

void my\_recursive\_function(int n)

{

if(n == 0)

return;

printf("%d ",n);

my\_recursive\_function(n-1);

}

int main()

{

my\_recursive\_function(10);

return 0;

}

a) 10  
b) 1  
c) 10 9 8 … 1 0  
d) 10 9 8 … 1

7. What is the base case for the following code?

void my\_recursive\_function(int n)

{

if(n == 0)

return;

printf("%d ",n);

my\_recursive\_function(n-1);

}

int main()

{

my\_recursive\_function(10);

return 0;

}

a) return  
b) printf(“%d “, n)  
c) if(n == 0)  
d) my\_recursive\_function(n-1)

8. How many times is the recursive function called, when the following code is executed?

void my\_recursive\_function(int n)

{

if(n == 0)

return;

printf("%d ",n);

my\_recursive\_function(n-1);

}

int main()

{

my\_recursive\_function(10);

return 0;

}

a) 9  
b) 10  
c) 11  
d) 12

9. What does the following recursive code do?

void my\_recursive\_function(int n)

{

if(n == 0)

return;

my\_recursive\_function(n-1);

printf("%d ",n);

}

int main()

{

my\_recursive\_function(10);

return 0;

}

a) Prints the numbers from 10 to 1  
b) Prints the numbers from 10 to 0  
c) Prints the numbers from 1 to 10  
d) Prints the numbers from 0 to 10

10. Which of the following statements is true?  
a) Recursion is always better than iteration  
b) Recursion uses more memory compared to iteration  
c) Recursion uses less memory compared to iteration  
d) Iteration is always better and simpler than recursion

11. What will be the output of the following code?

int cnt=0;

void my\_recursive\_function(int n)

{

if(n == 0)

return;

cnt++;

my\_recursive\_function(n/10);

}

int main()

{

my\_recursive\_function(123456789);

printf("%d",cnt);

return 0;

}

a) 123456789  
b) 10  
c) 0  
d) 9

12. What will be the output of the following code?

void my\_recursive\_function(int n)

{

if(n == 0)

{

printf("False");

return;

}

if(n == 1)

{

printf("True");

return;

}

if(n%2==0)

my\_recursive\_function(n/2);

else

{

printf("False");

return;

}

}

int main()

{

my\_recursive\_function(100);

return 0;

}

a) True  
b) False

13. What is the output of the following code?

int cnt = 0;

void my\_recursive\_function(char \*s, int i)

{

if(s[i] == '**\0**')

return;

if(s[i] == 'a' || s[i] == 'e' || s[i] == 'i' || s[i] == 'o' || s[i] == 'u')

cnt++;

my\_recursive\_function(s,i+1);

}

int main()

{

my\_recursive\_function("thisisrecursion",0);

printf("%d",cnt);

return 0;

}

a) 6  
b) 9  
c) 5  
d) 10

14. What is the output of the following code?

void my\_recursive\_function(int \*arr, int val, int idx, int len)

{

if(idx == len)

{

printf("-1");

return ;

}

if(arr[idx] == val)

{

printf("%d",idx);

return;

}

my\_recursive\_function(arr,val,idx+1,len);

}

int main()

{

int array[10] = {7, 6, 4, 3, 2, 1, 9, 5, 0, 8};

int value = 2;

int len = 10;

my\_recursive\_function(array, value, 0, len);

return 0;

}

a) 3  
b) 4  
c) 5  
d) 6