

# AMCAT

## COMPUTER PROGRAMMING PRINCIPLES AND APPLICATIONS: Sample Questions

All questions are Multiple-Choice-Questions with only one option as the correct answer.

**Q1. A 8-bit signed integer has the following range:**

- a. 0 to 255
- b. -128 to 127
- c. -255 to 254
- d. 0 to 509

**Q2. What will be the output of the following code statements?**

```
integer x = 34.54, y = 20, z = -5
print ( y > 50 AND z > 10 or x > 30 )
```

- a. 0
- b. 1
- c. -1
- d. 10

**Q3. Pankaj makes a program to print the product of cubes of the first 10 whole numbers. She writes the following program:**

```
integer x = 0 // statement 1
integer sum = 0 // statement 2
while ( x < 10 ) // statement 3
{
    sum = x*x*x // statement 4
    x = x + 1 // statement 5
}
print sum // statement 6
```

Is her program correct? If not, which statement will you modify to correct it?

- a. No error, the program is correct.
- b. Statement 1
- c. Statement 4
- d. statement 6

**Q4. I have a problem to solve which takes as input a number n. The problem has a property that given the solution for (n-1), I can easily solve the problem for n. Which programming technique will I use to solve such a problem?**

- a. Iteration
- b. Decision-making
- c. Object Oriented Programming
- d. Recursion

**Q5. Given:**

**integer x = 40, y = 35, z = 20, w = 10**

**Comment about the output of the following two statements:**

```
print x * y / z - w  
print x * y / (z - w)
```

- a. Differ by 80
- b. Same
- c. Differ by 50
- d. Differ by 160

**Q6. Data and function in which area of a class are directly accessible outside the class?**

- a. Public
- b. Private
- c. Protected
- d. None of these

**Q7. Here is an infix notation:  $((A+B)*C-(D-E))^{(F+G)}$  Choose the correct postfix notation of the above from the given options.**

- a.  $AB+CD*E--FG+^{\wedge}$
- b.  $AB+C*DE--FG+^{\wedge}$
- c.  $AB+C*DE-FG-+^{\wedge}$
- d.  $A+BC*DE-FG-+^{\wedge}$

**Q8. If the depth of a tree is 3 levels, then what is the size of the Tree?**

- a. 2
- b. 4
- c. 6
- d. 8

**Q9. One of the following options is a form of access used to add and remove nodes from a queue.**

- a. LIFO
- b. FIFO
- c. Both LIFO and FIFO
- d. None of these

**Q10. What is the time complexity of adding three matrices of size  $N \times N$  cell-by-cell?**

- a.  $O(N)$
- b.  $O(N^2)$
- c.  $O(N^3)$
- d. None of these

