

**Quaid-i-Azam University
Department of Computer Science**

Aptitude Test - Sample Paper

The purpose of this sample test is to give applicants an idea of computer science subject areas in which their knowledge will be evaluated. The number of questions may vary in the actual admission test. The duration will be two hours.

Part 1: Logic and Comprehension

Q1.

Box no.	1	2	3	4	5	6
Contents	0	-1	2	-4	5	-6

1. Cube the contents of box no. 2
2. Add the result of step 1 to contents of box no. 4 and store the result in box no. 2
3. Subtract the contents of box no. 3 from contents of box no. 2 and store the result in box no. 4
4. The result in box no. 4 is:

- A) -5 B) 5 C) -7 D) 7 E) None

Q2. America's first globe maker was James Wilson, who _____ and blacksmith in his earlier life.

- A) is a farmer B) had been a farmer C) farming D) being a farmer E) None

Part 2: Digital Logic Design Sample Paper

Q3. Convert the number $(EF8.7A)_{16}$ to base 8

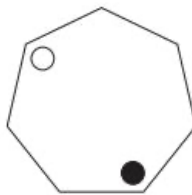
Q4. Represent -12 in 8 bits using sign magnitude and 2's complement

Reference Book

- Digital Logic and Computer Design by M. Morris Mano, Latest Edition.

Part 3: Problem Solving

Q5. At each stage the black dot moves three corners clockwise and the white dot moves four corners anticlockwise. After how many stages will both dots be together in the same corner?



Q6. Suppose you have a very basic computing device which can perform only two arithmetic operations addition (+) and subtraction (-). Write steps to calculate product of two non-negative integers on this machine using basic constructs of sequence, selection, and/or repetition.

Reference Books

- Gaddis, Tony. Starting out with Programming Logic and Design, Latest Edition
- Sprankle, Maureen. Hubbard, Jim. Problem Solving and Programming Concepts, Latest Edition

Part 4: Programming

Q7.

Nayatel (an internet service provider company) has three different internet packages for its customers:

Package A: For Rs. 600 per month, 450 minutes are provided. Additional usage costs Rs.10 per minute.

Package B: For Rs. 1000 per month, 900 minutes are provided. Additional usage costs Rs.30 per minute.

Package C: For Rs. 1800 per month, unlimited minutes are provided.

Write a program using C++ that calculates a customer's monthly bill. It should take customer number, package, and minutes used as input and display the customer's monthly bill.

Q8. What does the following code segment display?

Try it with input: 32541 then, describe the action of the code.

```
int main ()
{
    cout<<"\n enter a positive integer> ";
    cin>>num;
    do
    {
        cout<< num % 10;
        num /= 10;
    } while (num > 0);
}
```

Reference Book:

- Gaddis, Tony. Starting Out with C++ from Control Structures to Objects, Latest Edition