Full Marks: 50

Group-A

Find the correct answers.   **2X10=20**

1.
```
while (first <= last)
{
if (array [middle] < search)
        first = middle +1;
else if (array [middle] == search)
        found = True;
else last = middle – 1;
middle = (first + last)/2;
}
if (first < last) not Present = True;
```

The cyclomatic complexity of the program segment is _____.

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

2. At least how many test cases are required to achieve multiple condition coverage of the following code segment:
   If ((a>5) and (b50)) x=x+1;
   a) 2
   b) 4
   c) 6
   d) 8

3. If branch coverage has been achieved on a unit under test, which of the following is coverage is implicitly implied?
   a) Path coverage
   b) Multiple condition coverage
   c) Statement coverage
   d) Data flow coverage

4. When in the development cycle is code review carried out?
   a) After coding is complete and before the code is compiled
   b) After coding is complete and after the code is compiled
   c) After unit testing is over

d) After system testing is over

5. What would be the Cyclomatic complexity of the following program?

```
int     find-maximum(int i,int j,     int     k){
        int     max;
        if(i>j)  then
        if(i>k) then     max=i;
        else     max=k;
        else     if(j>k) max=j
        else     max=k;
        return(max);
    }
    }
```

a) 2
b) 3
c) 4
d) 5

6. If the condition expression in a conditional statement is composed of n atomic conditions, what is the number of test vases required to achieve multiple condition coverage?
a) n
b) 2^n
c) 2 X n
d) 2 X n +1

7. Which one of the following software tools will best help you determine whether your test cases are fully exercising your code?
a) Dynamic analyzer
b) Static analyzer
c) Parser
d) Profiler

8.Alpha and beta testing are considered to be which one of the following types of testing?

a) Regression testing
b) Unit testing
c) Integration testing
d) Acceptance testing

9. Which one of the following can be considered as a program verification technique?

a) Unit testing
b) Integration testing
c) Code review
d) Acceptance testing

10.   At least how many test cases are required to achieve condition/decision coverage of the following code segment:

If ((a>5) and (b<100) and (c>50)) x=x+1;

 a) 1
 b) 2
 c) 3
 d) 4

Group-B

Answer the following questions.   **3X10 = 30**

1. Suppose a C program has 240 sequence type of statements, 50 selection type of statements and 40 iteration type of statements, determine the minimum number of test cases required for path testing? What does Fog Index signify and how the Fog index is useful in producing software documentation?   6+4=10

2. Identify the type of defects that you would be able to detect during a) Code inspection b) Code walkthrough.
    Design a black-box test suite for a program that accepts two strings and checks if the first string is a substring of the second string and displays the number of times the first string occurs in the second string. Assume that each of the two strings as size less than 20 characters.   4+6=10

3. What is the difference between phased and incremental integration testing? Explain the difference between testing in the large and testing in the small? What is the difference between top-down and bottom-up integration testing approaches? Identify the types of information that should be presented in the test summary report.   3+3+3+1=10