Amity School of Engineering and Technology

Mid Term Examination

Software Testing and Quality Assurance (IT 414)

Max. Time: 1 Hr. Max. Marks: 20

Note: Attempt any five. Each Question carries equal marks.

Q.1 Differentiate them:
(I) Walkthrough and Inspection
(II) Quality Assurance and Quality Control

Q.2 What is the significance of Verification and Validation in software testing explain the differences between the two.

Q.3 Discuss different types of equivalence class test cases.

Q.4 Admission to a professional course is subject to following conditions:

a. marks in mathematics >=60
b. marks in physics >=50
c. marks in chemistry >=40
d. total in all three subjects >=200
e. or total in mathematics and physics >=150

If aggregate marks of an eligible candidate are more than 225. He/she will be eligible for honors course; otherwise he/she will be eligible for pass course. The program reads the marks in the three subjects and generates the following outputs:

a. Not eligible b. Eligible to pass course c. Eligible to honors course

Design test cases using decision table using technique.

Q.5 Consider a program to handle personal loan of a customer. It's input is a triple of positive integers (say principal, rate and term).

1000 <= principal <=40000 (in Rs)
1 <=rate <= 18 (in percentage per annum)
1 <=term <=6 (in years)

The program should calculate the simple interest.

Generate boundary value test cases to test the given program.

Q.6 What is the difference between white and black box testing? Is determining test cases easier in black or white box testing? Is it correct to claim that if white box testing is done properly, it will achieve close to 100% path coverage?

Q.7 What is Cyclomatic complexity? Consider the following code snippet:

```
int main()
{
  int a,b,c,D;
  printf ("Insert the values of a,b,c : ");
  scanf ("%d%d%d", &a, &b,&c);
 D = b*b-4*a*c;
  if (D<0)
 {
       printf ("\Roots are imaginary"") ;
 }
 elseif (D>0)
{
       printf ("\Roots are real and distinct"") ;
 }
  Else
{
{
       printf ("\Roots are real and same"") ;
 }

  return 0;
}
```

(i) Draw the flow graph and DD path graph for this program segment.
(ii) Determine the Cyclomatic complexity for this program by all three method.