else if (a ≠ b) and (a ≠ c) and (b ≠ c)

then output ("scalene")

else output ("isosceles")

fi

fi

else output ("not a triangle")

fi

4. (a) Describe domain testing with an example. **7**

(b) What is program slice ? Write a program in C to perform Linear search and create DD paths and DU paths in it. **8**

Unit III

5. (a) What is integration testing ? With the help of an example illustrate how integration in object oriented testing is different from integration testing in procedural software. **8**

(b) What are issues of object oriented testing ? **7**

No. of Printed Pages : 05 **Roll No. .....**

AA-581

M. Tech. EXAMINATION, Dec. 2017

(First Semester)

(B. Scheme) (Main & Re-appear)

(CSE)

CSE-501-B

SOFTWARE VERIFICATION, VALIDATION AND TESTING

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) A marketing company wishes to construct a decision table to decide how to treat clients according to three characteristics : Gender, City Dweller, and age group : A (under 30), B (between 30 and 60), C (over 60). The company has four products (W, X, Y and Z) to test market. Product W will appeal to female city dwellers. Product X will appeal to young female. Product Y will appeal to Male middle aged shoppers who do not live in cities. Product Z will appeal to all but older females." Construct a decision table for the above scenario. **10**

(b) How testing of software is different from testing of other product ? Also discuss limitations of software testing. **5**

2. (a) With an illustrative example describe concept of cause effect graphing techniques of testing. **7**

(b) Compare validation and verification. **4**

(c) What is exhaustive testing ? Why is it not possible to test a software exhaustively ? Explain with an example. **4**

Unit II

3. Consider the code given below, draw a DD-graph for this program and also calculate cyclomatic complexity of it : **15**

```
output ("Enter 3 integers")
input (a, b, c)
output ("side a b c : ", a, b, c)
if (a < b) and (b < a + c) and (c < a + b)
then is Triangle ← true
else is Triangle ← false
fi
if is Triangle
then if (a = b) and (b = c)
else output ("equilateral")
```

6. What is test case prioritization ? What can be the possible goals of test case prioritization ? What are various techniques for test case prioritization ? **15**

Unit IV

7. What are Finite state machines ? Explain with an example how regular expression can be used to represent test cases. **15**

8. Write short notes on the following :

(a) Object oriented testing

(b) Automated test case generation. **15**

6. What is test case prioritization ? What can be the possible goals of test case prioritization ? What are various techniques for test case prioritization ? **15**

Unit IV

7. What are Finite state machines ? Explain with an example how regular expression can be used to represent test cases. **15**

8. Write short notes on the following :

(a) Object oriented testing

(b) Automated test case generation. **15**