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| logo1 | **PESIT Bangalore South Campus**  Hosur road, 1km before Electronic City, Bengaluru -100  **Department of Computer Science and Engineering** |  |

**INTERNAL ASSESSMENT TEST 2**

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| **Date :** 23/09/19 | **Max Marks: 40** |
| **Subject & Code:** Intr. To Software Testing (15CS552) | **Section:** A,B and C |
| **Name of Faculty:** D.sudaroli Vijayakumar | **Time: 11**:30 AM-1:00 PM |

**Note: *Answer FIVE full questions. Selecting One question from each part.***

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|  | **Part I** |  |
| 1a | What is structural testing? Why to use white box testing when black box testing is used to test conformance of requirements? | **4** |
| 1b | Consider the following program segment:  /\* Sort takes an integer array and sorts it in ascending order \*/   1. Void sort(int a[], int n){ 2. int i,j; 3. for(i=0;i<n;i++) 4. for(j=i+1;j<n;j++) 5. if(a[i]>a[j]) 6. { 7. temp=a[i]; 8. a[i]=a[j]; 9. a[j]=temp; 10. } 11. } 12. Draw the program graph for this program segment. 13. Determine the cyclomatic complexity for this program. 14. How is the cyclomatic complexity metric useful? | **4** |
|  | OR |  |
| 2 | Consider a program to input two numbers and print them in ascending order given below. Find all du-paths and identify those du-paths that are definition clear. Also find all du-paths, all-uses and all-definitions and generate test cases for these paths.   1. Void main() 2. { 3. int a,b,t; 4. clrscr(); 5. printf(“Enter first number:”); 6. scanf(“%d”,&a); 7. printf(“Enter Second number:”); 8. scanf(“%d”,&b); 9. if(a<b){ 10. t=a; 11. a=b; 12. b=t; 13. } 14. Printf(“%d%d”,a,b); 15. getch(); 16. } | **8** |
|  | **Part II** |  |
| 3a | What is a typical test execution phase? Explain the steps involved in test execution phase. | **5** |
| 3b | Write short notes on procedure call testing. | **3** |
|  | OR |  |
| 4 | Consider the program to input two numbers and print them in ascending order given in question no.2. Consider all variables and generate possible program slices. Design at least one test case from every slice. | **8** |
|  | **Part III** |  |
| 5a | What is test oracle? What are its advantages and disadvantages over human oracle? | **4** |
| 5b | Explain fault-based adequacy criteria. | **4** |
|  | OR |  |
| 6 | Define Scaffolding and its purpose with reference to test execution. Differentiate generic versus specific Scaffolding. | **8** |
|  | **Part IV** |  |
| 7 | Explain the following: i) Test case ii) Test case specification iii) Test suite iv) Adequacy criteria  v) Test obligation. | **8** |
|  | OR |  |
| 8 | Consider the greatest of three numbers code and explain the difference between statement coverage, branch coverage, path coverage and condition coverage. | **8** |
|  | **Part V** |  |
| 9 | Explain the terminologies involved in mutation testing and the purpose of mutation score with suitable example. | **8** |
|  | OR |  |
| 10 | Explain Mccabe’s basis path methods with suitable example to identify the paths as well as comment on the violations in structured programming. | **8** |