**3+1+3+3=10 Marks**

Consider the following code with line numbers mentioned:

|  |
| --- |
| 1.public int binarySearch(int sortedArray[ ], int searchValue)  2.{  3. int bottom = 0, top = sortedArray.length - 1;  4. int middle, locationOfsearchValue;  5. boolean found = false;  6. int locationOfsearchValue = -1; /\* the index of searchValue in the  sortedArray. -1 means not found \*/  7. while ( bottom <= top && !found){  8. middle = (top + bottom)/2;  9. if (searchValue == sortedArray[ middle ]) {  10. found = false;  11. locationOfsearchValue = middle;  12. }  13. else  14. if (searchValue < sortedArray[ middle ])  15. top = middle – 1;  16. }  17. else  18. bottom = middle + 1;  19. } // end while  20. return locationOfsearchValue;  21.} |

**To do:**

1. Draw Control flow graph or Flow Chart of above code
2. Calculate cyclomatic complexity
3. Identify all paths to achieve 100% statement and branch coverage
4. Write test cases for each independent path