Question No. 49

(a) If we take a random number say $n = 30$. it means 30 statements in this list is false and 70 statements including 30th is true. Then there are 70 possible numbers. Let us take 50 is one amongst them. It means if 50th statement is correct then other 50 statements must be false. This is contradictory because previous statement told 70 statements are true now 50 statements are true. So, we cannot choose a random number. So, safety is that if we chose exact one statement to be true then 99 other statements will be false. as the 100th statement is false.
So, the answer is 99th statement is true.

(b) No- Ans :

The 100 th statement cannot be true as it is claiming that all of the statements including itself is false. So, it is contradictory. So, at least one statement is false. Thus, statement 1 is correct. Then if 99th statement is true then from 2 to 100 statement is false where 99 th statement is present it-self. So, due to contradiction 99th statement is also false. So, 2nd statement is true. Similarly, from 1 to statement 50 is true and from 51 to 100 statement is false.

Ans NO (C)

If there are odd number of statements then at the middle statement problem occurs. Let's take there are 3 statements. As, 3 no. statement is false, so, no. 1 statement is true. Now, if we assume statement 2 is false then it means more than 2 statements are true but no. 3 is already false, so, it is contradictory. Again if statement 2 is true then it is claiming atleast 2 statements must be false, but statement 1 is already true. so, statement 2 has to be simultaneously true and false. so, it is contradictory. Therefore, it will not work when there is odd number of statements.