

(i) A, B and C are three people. One of them is a *liar* who always tells lies, another is a *saint* who always tells the truth, and the third is a *switcher* who sometimes tells the truth and sometimes lies. They make the following statements:

A: I am the liar.

B: A is the liar.

C: I am not the liar.

Who is the liar among A, B and C? Briefly explain your answer.

(ii) P, Q and R are three more people, one a liar, one a saint, and the third a *contrarian* who tells a lie if he is the first to speak or if the preceding speaker told the truth, but otherwise tells the truth. They make the following statements:

P: Q is the liar.

Q: R is the liar.

R: P is the liar.

Who is the liar among P, Q and R? Briefly explain your answer.

(iii) X, Y and Z are three more people, one a liar, one a switcher and one a contrarian. They make the following statements:

X: Y is the liar.

Y: Z is the liar.

Z: X is the liar.

X: Y is the liar.

Y: X is the liar.

Who is the liar among X, Y and Z? Briefly explain your answer.