5. Are the following set of ordered pairs functions?

   (i) $\{(x,y) : x$ is a person, y is the mother of $x\}$.

   (ii) $\{(a, b) : a$ is a person, b is an ancestor of $a\}$.

Sol. (i) We have $\{(x, y) : x$ is a person, y is the mother of $x\}$.

   Clearly each person $'x'$ has only one biological mother.

   so above set of ordered pair is a function.

   (ii) We have $\{(a, b) : a$ is a person, b is an ancestor of $a\}$

   Clearly any person $'a'$ has more than one ancestors.

   So, it does not represent function.