

Activity 5

OBJECTIVE

To identify a relation and a function.

MATERIAL REQUIRED

Hardboard, battery, electric bulbs of two different colours, testing screws, tester, electrical wires and switches.

METHOD OF CONSTRUCTION

1. Take a piece of hardboard of suitable size and paste a white paper on it.
2. Drill eight holes on the left side of board in a column and mark them as A, B, C, D, E, F, G and H as shown in the Fig.5.

3. Drill seven holes on the right side of the board in a column and mark them as P, Q, R, S, T, U and V as shown in the Figure 5.

4. Fix bulbs of one colour in the holes A, B, C, D, E, F, G and H.

5. Fix bulbs of the other colour in the holes P, Q, R, S, T, U and V.

6. Fix testing screws at the bottom of the board marked as 1, 2, 3, ..., 8.

7. Complete the electrical circuits in such a manner that a pair of corresponding bulbs, one from each column glow simultaneously.

8. These pairs of bulbs will give ordered pairs, which will constitute a relation which in turn may /may not be a function [see Fig. 5].

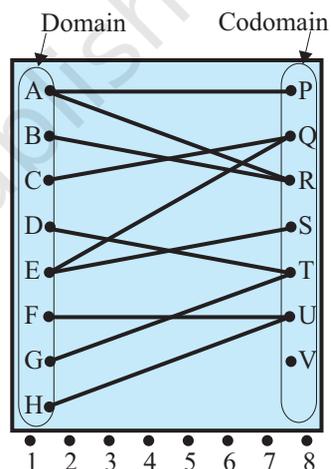


Fig. 5

DEMONSTRATION

1. Bulbs at A, B, ..., H, along the left column represent domain and bulbs along the right column at P, Q, R, ..., V represent co-domain.
2. Using two or more testing screws out of given eight screws obtain different order pairs. In Fig.5, all the eight screws have been used to give different ordered pairs such as (A, P), (B, R), (C, Q) (A, R), (E, Q), etc.
3. By choosing different ordered pairs make different sets of ordered pairs.

OBSERVATION

1. In Fig.5, ordered pairs are _____.
2. These ordered pairs constitute a _____.
3. The ordered pairs (A, P), (B, R), (C, Q), (E, Q), (D, T), (G, T), (F, U), (H, U) constitute a relation which is also a _____.
4. The ordered pairs (B, R), (C, Q), (D, T), (E, S), (E, Q) constitute a _____ which is not a _____.

APPLICATION

The activity can be used to explain the concept of a relation or a function. It can also be used to explain the concept of one-one, onto functions.