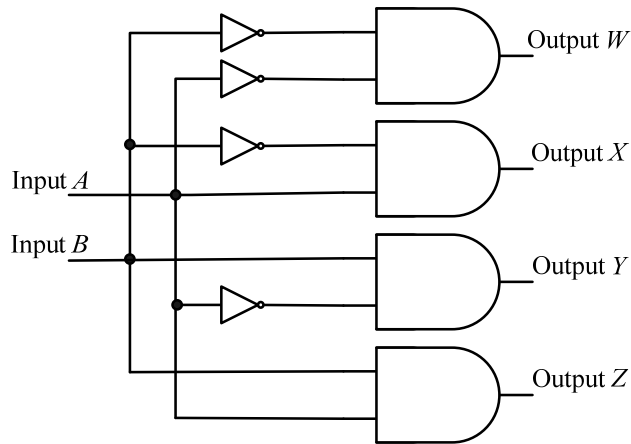


**Q18.** When two input signals  $A$  and  $B$  are given in the logic circuit shown below, which of the following tables describes the correct combination of output signals  $W$ ,  $X$ ,  $Y$ , and

$Z$ ? Here,  is used for an AND gate, and  for a NOT gate.



a)

| Input |     | Output |     |     |     |
|-------|-----|--------|-----|-----|-----|
| $A$   | $B$ | $W$    | $X$ | $Y$ | $Z$ |
| 0     | 0   | 1      | 0   | 0   | 0   |
| 0     | 1   | 0      | 0   | 0   | 1   |
| 1     | 0   | 0      | 0   | 1   | 0   |
| 1     | 1   | 0      | 1   | 0   | 0   |

b)

| Input |     | Output |     |     |     |
|-------|-----|--------|-----|-----|-----|
| $A$   | $B$ | $W$    | $X$ | $Y$ | $Z$ |
| 0     | 0   | 1      | 0   | 0   | 0   |
| 0     | 1   | 0      | 0   | 1   | 0   |
| 1     | 0   | 0      | 1   | 0   | 0   |
| 1     | 1   | 0      | 0   | 0   | 1   |

c)

| Input |     | Output |     |     |     |
|-------|-----|--------|-----|-----|-----|
| $A$   | $B$ | $W$    | $X$ | $Y$ | $Z$ |
| 0     | 0   | 0      | 0   | 0   | 1   |
| 0     | 1   | 0      | 0   | 1   | 0   |
| 1     | 0   | 1      | 0   | 0   | 0   |
| 1     | 1   | 0      | 1   | 0   | 0   |

d)

| Input |     | Output |     |     |     |
|-------|-----|--------|-----|-----|-----|
| $A$   | $B$ | $W$    | $X$ | $Y$ | $Z$ |
| 0     | 0   | 0      | 0   | 0   | 1   |
| 0     | 1   | 0      | 0   | 1   | 0   |
| 1     | 0   | 0      | 1   | 0   | 0   |
| 1     | 1   | 1      | 0   | 0   | 0   |