CSE 103

(ASSIGNMENT FROM BOOK)

Student ID : 1705010

Chapter : 1

Section : 1

Problem No. : 30

QUESTION

How many rows appear in a truth table for each of these compound propositions ?

a) $(q \rightarrow \neg p) \vee (\neg p \rightarrow \neg q)$

b) $(p \vee \neg t) \wedge (p \vee \neg s)$

c) $(p \rightarrow r) \vee (\neg s \rightarrow \neg t) \vee (\neg u \rightarrow v)$

d) $(p \wedge r \wedge s) \vee (q \wedge t) \vee (r \wedge \neg t)$

SOLUTION

We know that a truth table will need 2^n rows if there are n variables.

a) Here there are 2 variables. So, number of rows = $2^2 = 4$
b) Here there are 3 variables. So, number of rows = $2^3 = 8$
c) Here there are 6 variables. So, number of rows = $2^6 = 64$
d) Here there are 5 variables. So, number of rows = $2^5 = 32$