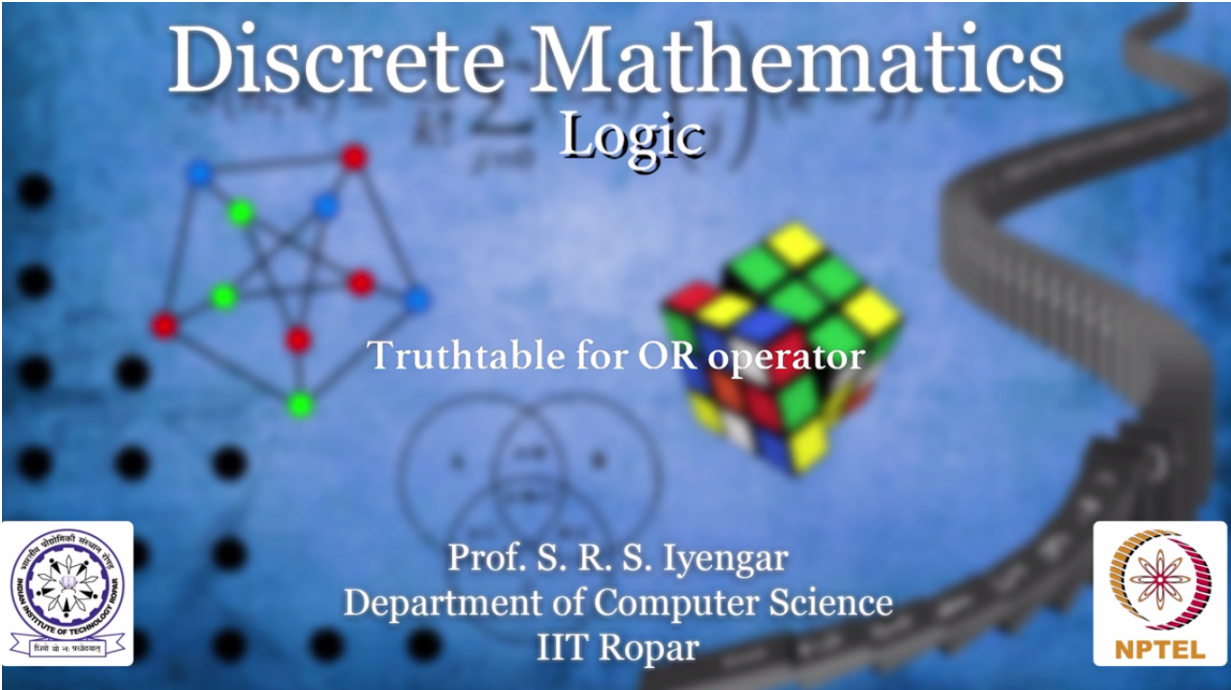


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The image is a cover for an NPTEL online course. At the top, it says "NPTEL NPTEL ONLINE COURSE". The main title is "Discrete Mathematics Logic" in a large, white, serif font. Below the title, the subtitle "Truthtable for OR operator" is written in a smaller, white, sans-serif font. The background is a blue gradient with various mathematical and logical symbols, including a graph with nodes and edges, a Rubik's cube, and a DNA double helix. In the bottom left corner, there is a logo for IIT Ropar, and in the bottom right corner, there is the NPTEL logo. The text "Prof. S. R. S. Iyengar" and "Department of Computer Science IIT Ropar" is centered at the bottom of the cover.

Discrete Mathematics
Logic
Truthtable for OR operator
Prof. S.R.S Iyengar
Department of Computer Science
IIT Ropar

I will give a good example for this. Let's say you have a cultural evening at your college. And you want your dad or mom one of them to be present. Now this is a very ambiguous statement. So you go to your dad and mom and you will say dad and mom I have something to tell you. I have a request to raise. There is a cultural evening in my college. I want dad either you to come or mom you to come. One of you should definitely come. Now analyze this statement properly. What do I mean if I go to my dad and mom and I say dad you come or mom you come. It sounds something like you have only one entry pass and you want dad to come or mom to come. This is why English is a very ambiguous language. You see. You might even mean definitely one of you should be there. Dad you have to come or mom you have to come. It should not so happen that both of you are missing. In that case, all that you are saying is I want both of you to come but it's okay if you one you cannot come. One of you should be there. One can miss but one should be there. Okay. These are two different statements. But an OR operator is basically the first example I gave you which is dad mom listen to me. I want dad either you to come or mom you to come. I will be happy if both of you come. That is precisely what is OR operator. If both of you don't come I will be unhappy, 0, 0, 0, 0. If dad doesn't come mom comes fine I am happy. Satisfied. My criteria gets satisfied. Dad comes mom doesn't come, still fine I requested one of you to come. Both dad and mom comes then it means I am happy. 1 or 1 is 1. So an OR operator stands for I want at least one of you to be present. Let me now


introduce you all to what is called an OR operator. O-R, OR. So what is it? Let me write all possibilities. 0, 0. 0, 1. 1, 0. 1, 1. Okay.

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OR Operator

p	q	$p \vee q$
0	0	0
0	1	1
1	0	1
1	1	1

OR



OR simply means one of them should be true. Correct. So 0 or 0 means neither of them is true. So the answer is 0. 0 or 1 means 1 because one of them is indeed true. Correct. This one is true. 1 or 0 again is 1. 1 or 1 is again 1.

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