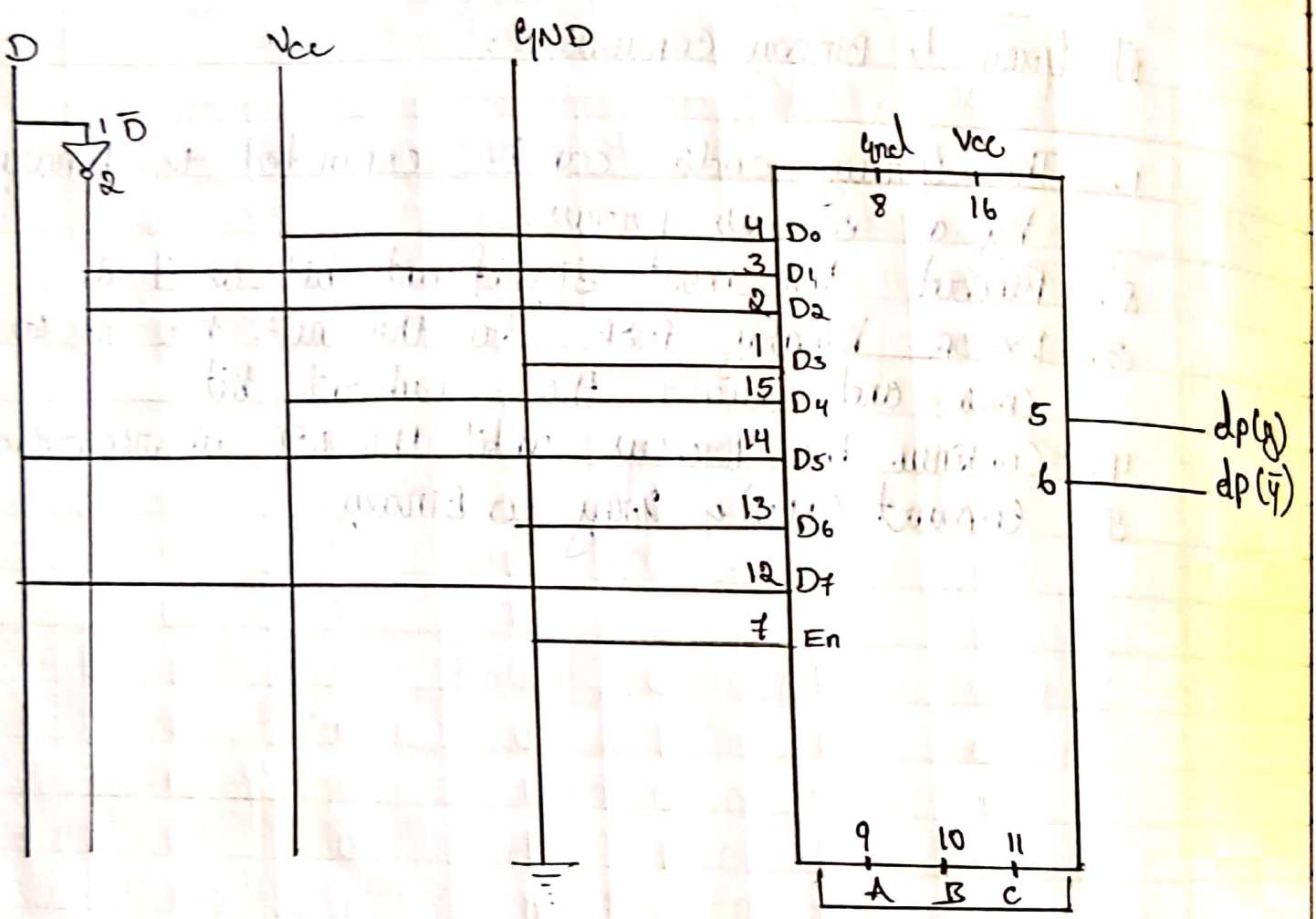

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Name of the Experiment : MULTIPLEXER

Aim:

Given a 4-variable logic expression, simplify it using appropriate technique and realise the simplified logic expression using 8:1 multiplexer I.C

f(a,b,c,d) = $\sum m$(0, 1, 2, 4, 8, 9, 11, 15)

APPARATUS:

* Digital IC trainer kit
* Patch cords
* IC-7404
* IC-74151

THEORY:

* Multiplexer is a logic circuit that switches digital data from several input lines on to a single output line in a specified time sequence.

* A mux has several data input lines and a single output line. it also has data select inputs which permit digital data any one of the inputs to be switched to the output line.

Inputs				Output	
				Y	$\bar{Y}$
A	B	C	D		
0	0	0	0	1	0
0	0	0	1	1	0
0	0	1	0	1	0
0	0	1	1	0	1
0	1	0	0	1	0
0	1	0	1	0	1
0	1	1	0	0	1
0	1	1	1	0	1
1	0	0	0	1	0
1	0	0	1	1	0
1	0	1	0	1	0
1	0	1	1	1	0
1	1	0	0	0	1
1	1	0	1	0	1
1	1	1	0	0	1
1	1	1	1	1	0

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Name of the Experiment : .....

* it is of 4:1 multiplexer. 2^n inputs to 1 output
* An 8:1 mux has three select lines. whereas the given function is a 4-variable function

Result:

Realisation of Boolean expression using 8:1 mux is verified.