

Fundamentals of Engineering Design (FED) 101- LCA

Test 2

Student name:

Student ID number:

Please provide complete and clear answers.

1. Complete the truth table for following Boolean expression (4 points)

$$A(B + AC + \bar{A})$$

A	B	C	Output
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	1

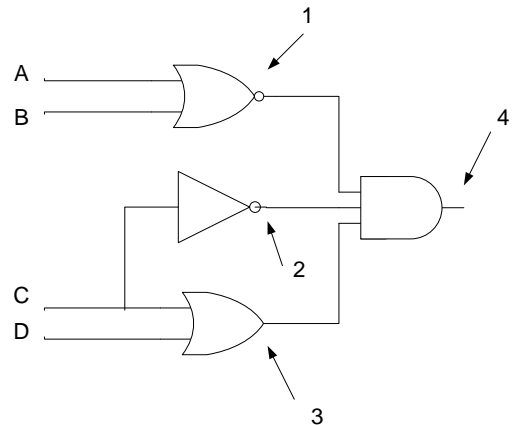
2. Convert the following logic gate circuit into a Boolean expression, writing Boolean sub-expressions next to each gate output (1, 2, 3 and 4) in the diagram (2 points)

Output 1: $\overline{A + B}$

Output 2: \bar{C}

Output 3: $C + D$

Output 4: $(\overline{A + B})(C + D)\bar{C}$



3. Draw a gate circuit to perform the following function (4 points)

$$(\overline{ABC}) \oplus A(\bar{B} + \bar{C})$$

