

1. 0625/42/O/N/19/No.8

(a) A wire of length 2.0 m and cross-sectional area 0.40 mm² has a resistance of 0.14 Ω.

Calculate the resistance of another wire of the same material of length 3.0 m and cross-sectional area 0.90 mm².

resistance = Ω [4]

(b) A student is designing a digital electronic circuit. Fig. 8.1 shows her partly completed design.

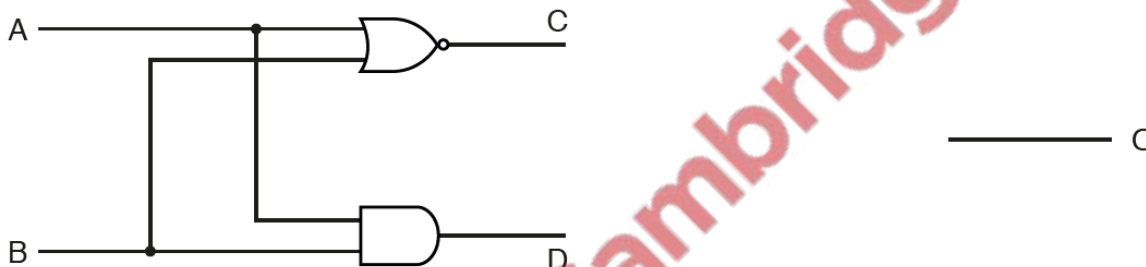


Fig. 8.1

(i) Table 8.1 is a truth table. Complete the columns in this truth table to show the values for input B in the circuit.

Table 8.1

Input A	Input B	Point C	Point D	Output O
1		0	0	1
0		0	0	1
1		0	1	0
0		1	0	0

[2]

(ii) The column O in the truth table shows the desired output values for the circuit.

On Fig. 8.1, complete the circuit to achieve these output values. Label any gate used. [2]

[Total: 8]