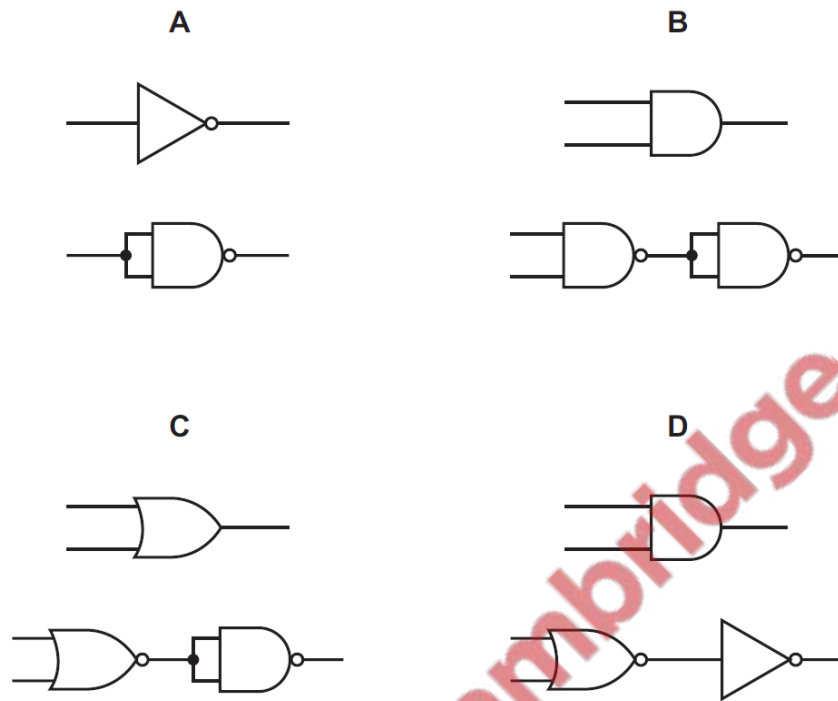


1. Nov/2021/QPaper_21,22&23/No.30

The diagrams show pairs of circuits containing logic gates.

In which diagram does the lower circuit of the pair behave differently from the upper circuit?



PapaCambridge

(a) Name the logic gate shown in Fig. 10.1.

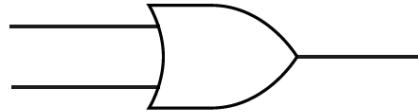


Fig. 10.1

[1]

(b) Fig. 10.2 shows a combination of logic gates.

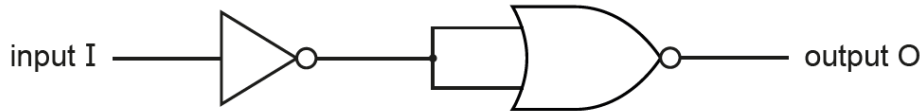


Fig. 10.2

Complete the right-hand column of Table 10.1, the truth table for the combination of logic gates. You may use the blank column for your working.

Table 10.1

input I		output O
0		
1		

[2]

(c) An electrical device has a metal case.

Explain the benefit of earthing the metal case.

.....

.....

..... [2]

(d) (i) Explain how a fuse protects a circuit.

.....

.....

..... [2]

(ii) The current in an electric kettle connected to the mains through a fuse is 10A.

Fuses with the following ratings are available.

3A

9A

10A

13A

30A

Circle the correct fuse rating for this appliance and explain your answer.

.....

.....

..... [2]

[Total: 9]

