

CHAPTER 10

FULL CHAPTER WORKSHEET – ANSWERS

November 2024 (21)

7(a)

One mark for each point

- NOT **X**
- **Y XOR Z**
- expression correct: NOT **X** OR (**Y XOR Z**) // (**Y XOR Z**) OR NOT **X**

7(b)

4 marks for 8 correct outputs

3 marks for 6/7 correct outputs

2 marks for 4/5 correct outputs

1 mark for 2/3 correct outputs

X	Y	Z	W
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	0
1	0	1	1
1	1	0	1
1	1	1	0

November 2023 (21)

7(a)

One mark for each point

- NOT **A**
- AND **B**
- OR NOT **C**
- expression correct (NOT **A** AND **B**) OR NOT **C**

7(b)

A	B	C	X
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	0

4 marks for 8 correct outputs

3 marks for 6/7 correct outputs

2 marks for 4/5 correct outputs

1 mark for 2/3 correct outputs

November 2023 (23)

6(a)

One mark for correct gate and **one** mark for correct truth table**AND**

A	B	X
0	0	0
0	1	0
1	0	0
1	1	1

6(b) **One** mark for correct gate and **one** mark for correct truth table

XOR // EOR

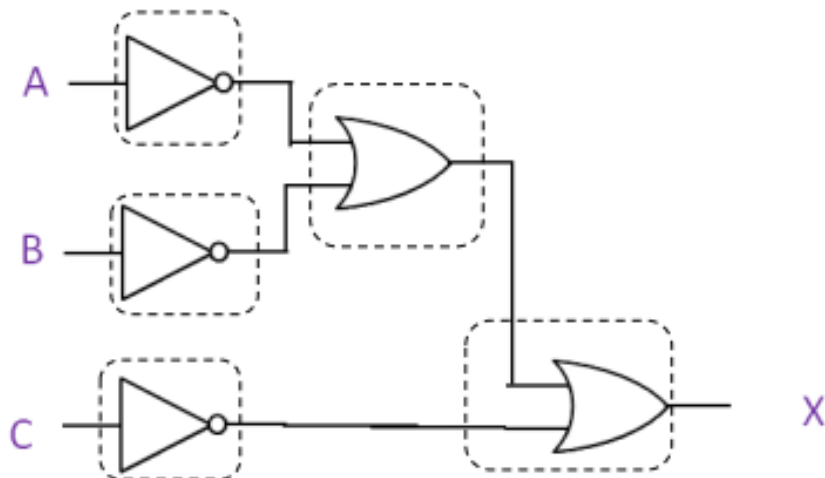
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

6(c) **One** mark for correct gate and **one** mark for correct truth table

NOR

A	B	X
0	0	1
0	1	0
1	0	0
1	1	0

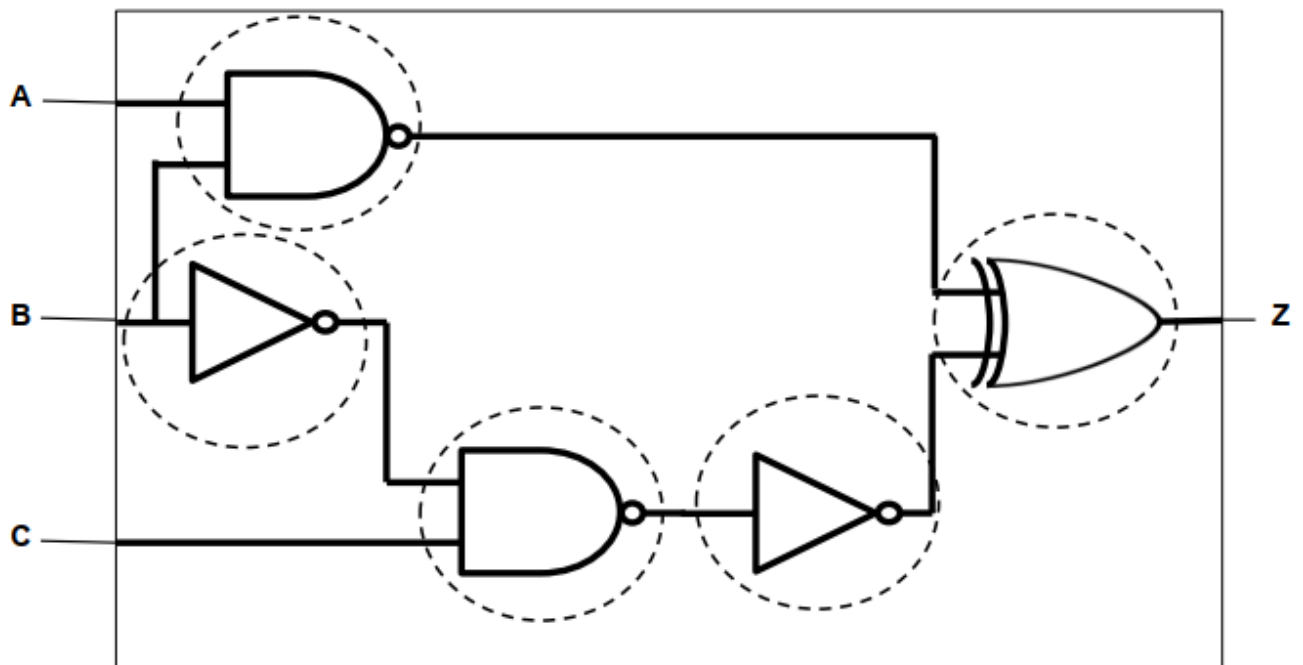
6(d) **One** mark for each correct gate, with the correct input(s) as shown.



March 2025 (22)

9(a)

One mark for each correct gate, with the correct input(s) as shown.



9(b)

Four marks for eight correct outputs

Three marks for six or seven correct outputs

Two marks for four or five correct outputs

One mark for two or three correct outputs

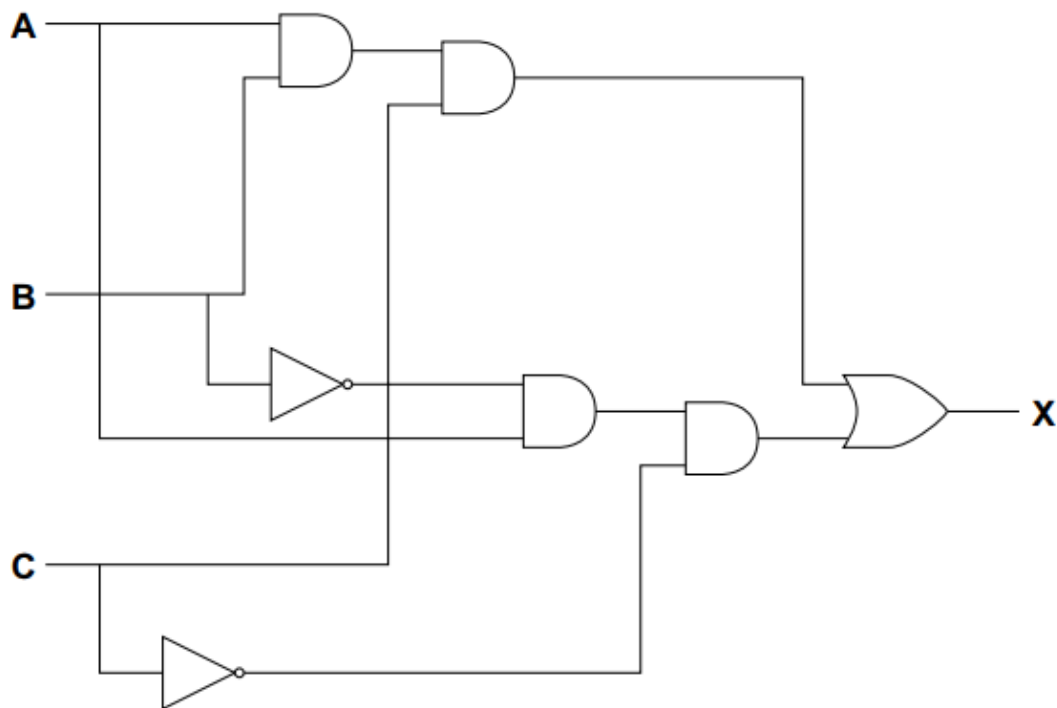
A	B	C	Z
0	0	0	1
0	0	1	0
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	0

SP 2023 (2B)

7(b) $X = ((A \text{ AND NOT } B \text{ AND NOT } C) \text{ OR } (A \text{ AND } B \text{ AND } C))$
One mark for each correct part of the logic expression:

(A AND NOT B AND NOT C)
OR
(A AND B AND C)

7(a) **One** mark for each correct NOT gate and OR gate with correct direction of input(s),
three marks for four correct **AND** gates
or
two marks for three correct **AND** gates
or
one mark for two correct **AND** gates with correct direction of inputs:



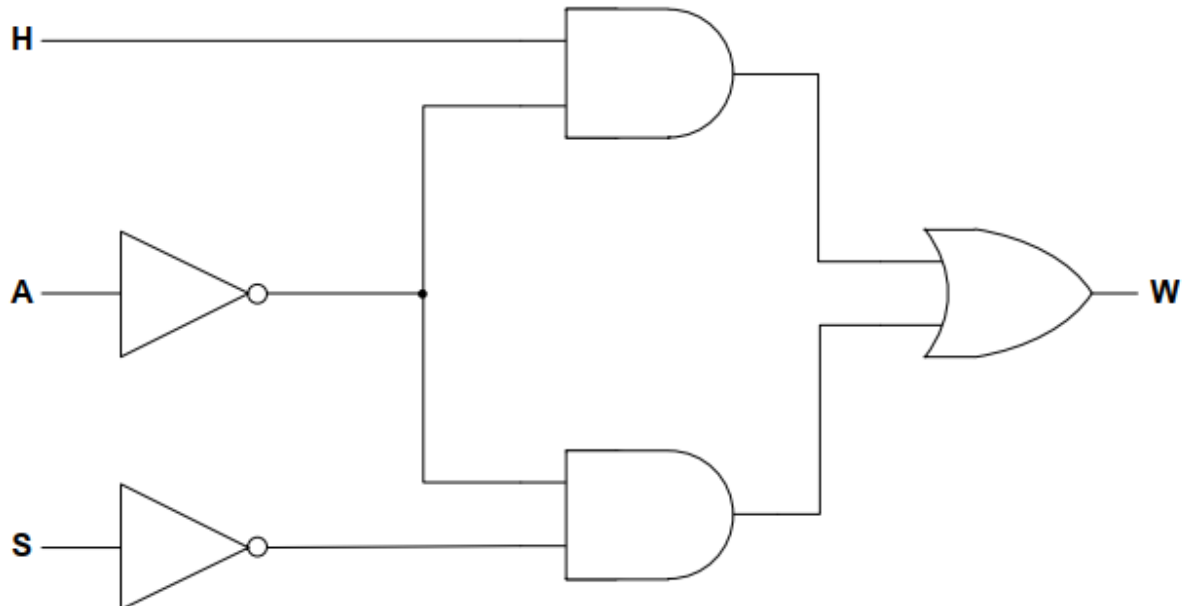
March 2021 (12)

5a

Truth Table			Logic Gate	
A	B	Output	NAND	[1]
0	0	1		
0	1	1		
1	0	1		
1	1	0		
A	B	Output	XOR / Exclusive OR	[1]
0	0	0		
0	1	1		
1	0	1		
1	1	0		
A	B	Output	NOR	[1]
0	0	1		
0	1	0		
1	0	0		
1	1	0		

5b

One mark for each logic gates with correct inputs



- NOT A
- NOT S
- H AND NOT A
- NOT A AND NOT S
- Final OR

November 2024 (23)

8

4 marks for 8 correct outputs
3 marks for 6/7 correct outputs
2 marks for 4/5 correct outputs
1 mark for 2/3 correct outputs

A	T	H	W
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	0

June 2025 (22)

8(a)

One mark for the logic gate and **one** mark for the truth table

XOR logic gate symbol:



Truth table:

A	B	X
0	0	0
0	1	1
1	0	1
1	1	0

8(b)(i)

One mark per mark point

MP1 A AND

MP2 (NOT B OR NOT C) // NOT(B AND C) // (B NAND C)

Or

One mark per mark point

MP3 A AND NOT B

MP4 OR A AND NOT C

Example answers

(X =) A AND (NOT B OR NOT C) // A AND NOT (B AND C) // A AND (B NAND C)

(X =) A AND NOT B OR A AND NOT C

8(b)(ii)

Four marks for eight correct outputs

Three marks for six or seven correct outputs

Two marks for four or five correct outputs

One mark for two or three correct outputs

A	B	C	X
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0