Revision Guide for A-Level Computer Science Unit 1.4.3 (SLR 15)

1.4.3 – Boolean algebra

Candidates should be familiar with AND, OR, NOT and XOR. Candidates should be familiar with the logic of each Boolean operator, and the truth tables.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates should be able to construct logic gate diagrams from a Boolean expression and viceversa.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates should be able to construct truth tables from Boolean expressions and logic gate diagrams.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates should have an understanding that Boolean expressions can be simplified and should have experience of simplifying expressions using Karnaugh maps.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates should be able to create, complete and interpret Karnaugh maps to simplify Boolean expressions	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates should be aware of the given De Morgan's laws and should be able to apply these to a Boolean statement.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates should have experience of manipulating and simplifying Boolean statements using these rules of distribution, commutation, association and double negation.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates need to understand the purpose and principles of D type flip flops and how and where they are used in a computer. They should be able to recognise how they can be triggered by a clock pulse (see practice paper 2 for an example).	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates are not expected to memorise the logic gates that make up a D-type flip flop.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆
Candidates need to understand the purpose and function of an adder circuit, and the difference between a half and full adder. They should be able to recognise and draw the logic gates and truth tables for full and half adders.	Before Revision☆☆☆☆☆ After Revision☆☆☆☆☆

Slideshows Teams	PG Online Textbook	Teach-ICT	CraignDave (Youtube)
All slideshows shared in Teams since Christmas.	Section 8: Chapter 40 Pages 223 to 226 **Read ☐** **Questions 1- 5 ☐** **Exercises P227 ☐** Chapter 41 Pages 228 to 230 **Read ☐** **Questions 1- 4 ☐** **Exercises P231 ☐** Chapter 42 Pages 233 to 236 **Read ☐** **Questions 1- 3 ☐** **Exercises P237 ☐** Chapter 43 Pages 238 to 240 **Read ☐** **Questions 1- 2 ☐** **Exercises P241 ☐**	1.4.3 Logic – Boolean logic **Theory ☐** 1.4.3 Logic – Gates, Expressions **Theory ☐** 1.4.3 Logic – Karnaugh Maps **Theory ☐** **Lesson tasks ☐** 1.4.3 Logic – Simplification **Theory ☐** 1.4.3 Logic – Adders **Theory ☐**	OCR A'Level Define problems using Boolean logic **Watched ☐** **Cornell Notes ☐** OCR A'Level Karnaugh maps parts 1 to parts 4 **Watched ☐** **Cornell Notes ☐** OCR A'Level Logic gates and truth tables **Watched ☐** **Cornell Notes ☐** OCR A'Level Simplifying Boolean algebra **Watched ☐** **Cornell Notes ☐** OCR A'Level Simplifying Boolean algebra example **Watched ☐** **Cornell Notes ☐** OCR A'Level OCR A'Level Half & Full adders **Watched ☐** **Cornell Notes ☐** OCR A'Level D type flip flops **Watched ☐** **Cornell Notes ☐**

Also; ISAAC Computer Science, Seneca Learning