

SL Unit 2 – Computer Organization

Quiz 1

Question 1

Objectives:	2.1.12	Exam Reference:	May-16 8
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Construct the truth table for the following expression.

$$A \text{ xor } (B \text{ or } C)$$

[3]

*Award [3] marks for all 8 correct rows in the truth table.
Award [2] marks if only 6/7 correct rows in the truth table.
Award [1] mark if only 5 correct rows in the truth table.*

A	B	C	A XOR (B OR C)
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	0

Question 2

Objectives:	2.1.10	Exam Reference:	May-14 7
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Outline how a colour can be represented in a computer.

[2]

A colour will be split into three components (*Accept RGB as an example*);
Each component will be assigned a certain number of bytes;

Question 3

Objectives:	2.1.3	Exam Reference:	May-16 6
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Describe how the cache memory can speed up the functioning of a processor. [2]

Award up to [2 max].

Cache memory is closer to CPU/faster to access than main memory/incorporated on the chip;
By holding recently/frequently used data and instructions in cache;
Execution of program/fetching instructions and data is faster;

Question 4

Objectives:	2.1.8	Exam Reference:	May-14 6
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Outline, with an example, one benefit of using computer-aided design (CAD) applications. [2]

Award [1 mark] for an example and [1 mark] for reason of use/functionality, up to [2 marks max].

Support design/layout/development/rapid prototyping in engineering/manufacturing /biomechanics/architecture;

Save time/costs associated to drawing/development;

Photorealistic rendering/photo simulation in architecture/video games/visual effects/simulators;

eg shading, radiosity, reflection, refraction, illumination for modelling and simulation;

Question 5

Objectives:	2.1.13	Exam Reference:	Nov-14 6
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Construct a logic diagram for the Boolean expression

$A \text{ and } B \text{ or not } B.$

[3]

Award [1 mark] for each correct logic gate up to [3 marks max].

