

Computer Systems Exam

i)

1. AND Gate

2. OR Gate

3. Not Gate

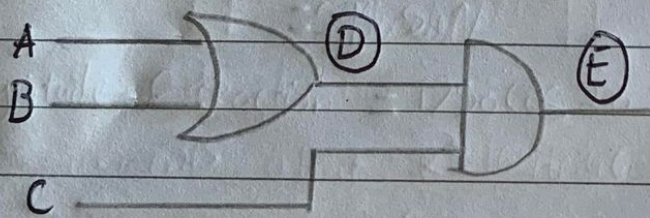
4. XOR Gate

5. NAND Gate

ii) AND Gat Truth Table

A	B	Output
0	0	0
0	1	0
1	0	0
1	1	1

iii) Indicate the Stages at logic level 1



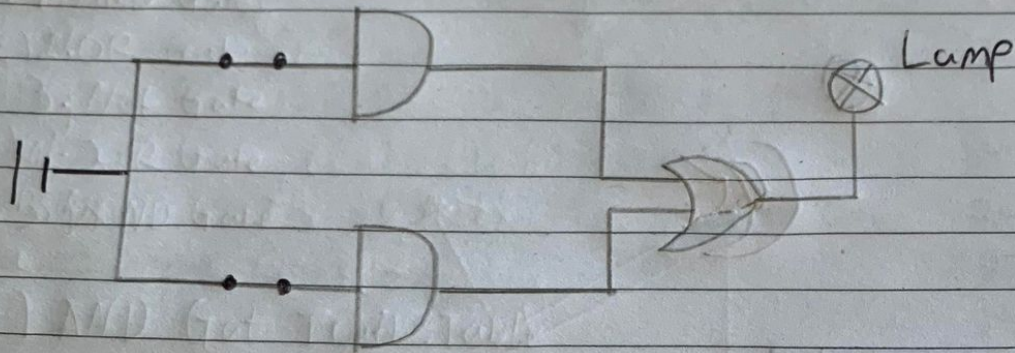
$$D = 1$$

$$E = 1$$

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iv)

Intermediate Domestic 2 Way Switch



Q2

i)

a) 1101 0111

b) 0010 0101 512 256 128 64 32 16 8 4 2 1

1 1 0 1 0 1 1 1 A = 215

0 0 1 0 0 1 0 1 B = 37

Hex - binary

ii 6F

6 = 8 4 2 1

6F = 0110 1111

0 1 1 0

EA = 1110 1010

F = 1 1 1 1

EA

E = 1 1 1 0

A = 1 0 1 0

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Q2 Dec to Binary

iii)

$a = 84$

$b = 246$

256 128 64 32 16 8 4 2 1

1 0 1 0 1 0 0

1 1 1 0 1 1 0

$a = 101010100$

$b = 11110110$

Subtraction method

$84 - 64 = 20$

$20 - 16 = 4$

4

$246 - 128 = 118$

$118 - 64 = 54$

54

iv) Hex to decimal

a) $A1 = 161$

b) $F5 = 245$

D - H

0 0

1 1

2 2

3 3

4 4

5 5

6 6

7 7

8 8

9 9

10 10 A

11 11 B

etc

$a = 10 \times 16^1 + 1 \times 16^0 = 161$

$b = 15 \times 16^1 + 5 \times 16^0 = 245$

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Q2	6 bit number values	6	(64)
Vi)	base 2 Bytes in a kilobyte	8	128
Vii)		4	256
			512

Q3 3D Specs

a) Intel core i7-10700 - 8 Core CPU

I have chosen this CPU as I ~~would~~ believe that a 3D animations artist will need multiple cores to have multiple tasks running at the same time with optimum performance

b) 16 Gigs

OF Ram would be sensible for a 3D animator as 3D animation software uses ~~more~~ a large amount of memory dedicated to the programme

c) ~~1TB~~ 2TB would be a suitable amount of storage for a Hard drive / SSD. as

A 3D animator / software designer will have a large quantity of work held on their PC

Q3

D) A 3D designer will need a; mouse, keyboard, 6+ usb3.0 ports, 2+ Hdmi ports, audio Jack, ethernet port.

All of this list is essential to any PC!!

E) A Suitable graphics Card would be a RTX 3070. I have chosen this as it is equipped with modern ray-tracing abilities and also support DX12 for the up to date graphics design. It also has 8GB of memory size which is optimum for a 3D animation developer.

Computer System Overview

Q1

Info. enters central processing unit. The data is the P.D. (primary data) which is what the hardware and software interaction gets the source. This is what the data is used for. The data is then used.

Alpha is a major component in terms of data.

Alpha is a central processing unit. This is the P.D. (primary data) which is what the hardware and software interaction gets the source. This is what the data is used for. The data is then used.

Info. and System Interaction

Q2

Info. enters central processing unit. The data is the P.D. (primary data) which is what the hardware and software interaction gets the source. This is what the data is used for. The data is then used.

Alpha is a major component in terms of data.

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