Computer's Practice Test #2

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1. a) The image is fuzzy because it has a lower image resolution, that is, fewer pixels per inch.

b) This is because as the image is scaled up, the image resolution/ppi remains constant, and the individual pixels become more defined / larger.

c) Monitor

d) Sharp quality bmp images require data for more pixels to be stored, thus they are heavier/larger files and harder to transmit.

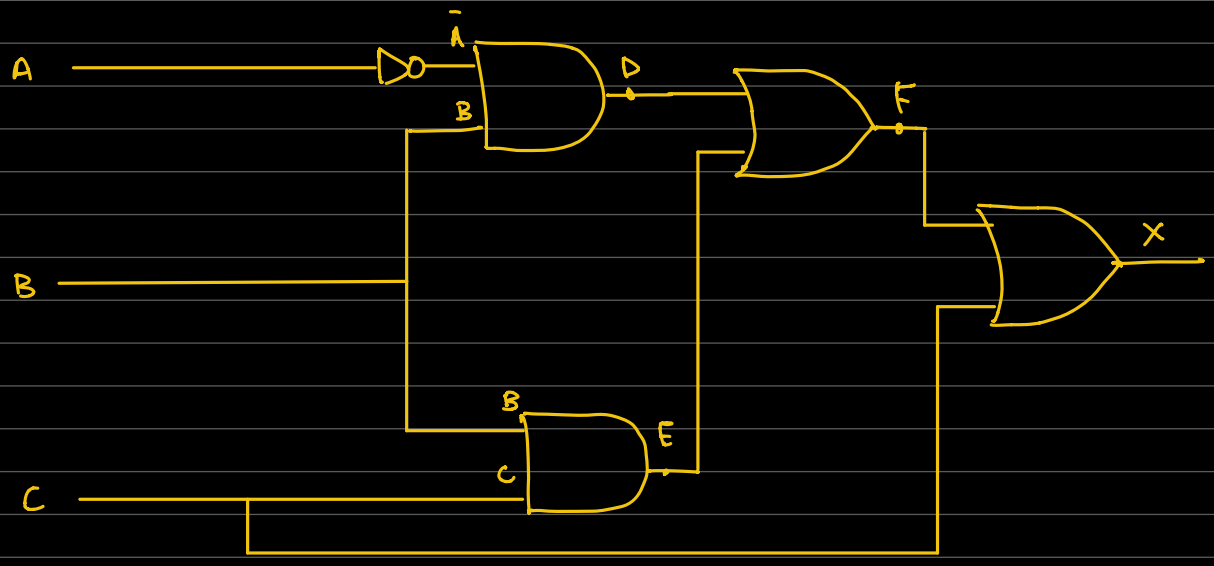
2. a) Sampling is used to construct a digital approximation of the sound waves of the original audio. The amplitude of the sound wave is recorded at set time intervals, and this recorded data is encoded into binary and stored digitally. The precision to which the amplitude is recorded is known as the sampling resolution and the no. of times the audio is sampled per second is known as the sampling rate.

b) i) Lossy
This is because through perceptual music shaping, ie. removing inaudible frequencies and the softer of two simultaneous, the file size can be reduced up to 90%, making it much easier to transmit.

ii) RLE (run length encoding) is lossless compression technique in which repeated adjacent data is stored in groups. It's usually stored in such a format that each group is defined by two values: the no. of repetitions and the actual data being repeated. As such, the original file can be reconstructed upon uncompressing.

iii)
Row 1 : 10 153 3 255 3 153
Row 2 : 9 153 6 255 1 153
Row 3 : 7 153 9 255

3.a) $x=1$ if $((\bar{a} \cdot b) + (b \cdot c)) + c$

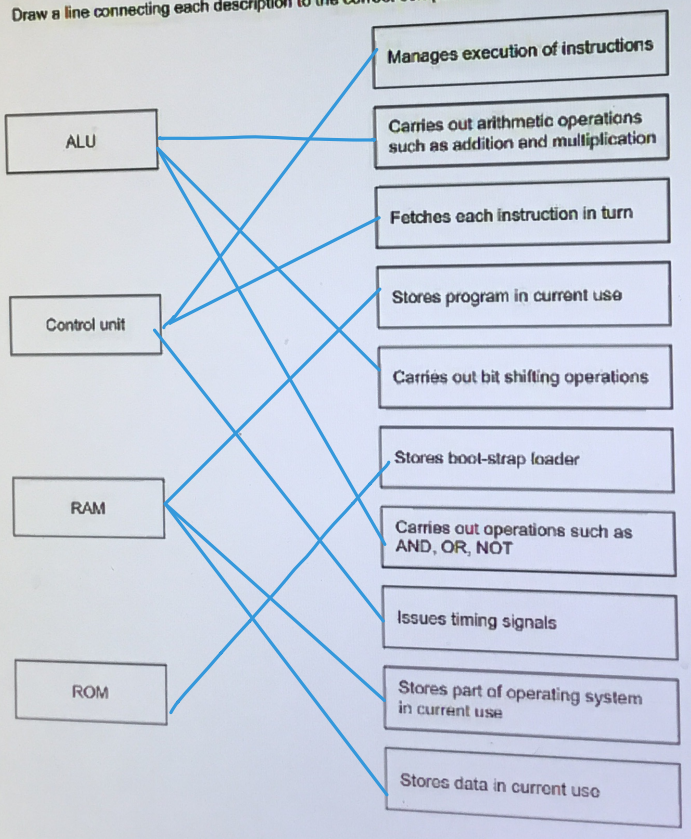


A	B	C	$\bar{A}$	D	E	F	X
0	0	0	1	0	0	0	0
0	0	1	1	0	0	0	1
0	1	0	1	1	0	1	1
0	1	1	1	1	1	1	1
1	0	0	0	0	0	0	0
1	0	1	0	0	0	0	1
1	1	0	0	0	0	0	0
1	1	1	0	0	1	1	1

ALU 1, 2, 5,

Q4 There are 4 processor component terms on the left and 10 descriptions of functions on right.

Draw a line connecting each description to the correct component.



[10]

Q5. a) i) LDD 102

ACC : 0 1 1 1 0 0 1 1

ii) ACC : 1 0 1 1 0 0 0 1

The addres where the value is to be found is given by value of index register + value of operad. (indexed addressing)

iii) LDI 103

	64	32	8	2	1	
103	0	1	1	0	1	1

$= 64 + 32 + 8 + 2 + 1$

$= 107$

so basically LDD 107

ACC : 0100 1011

Explanation: The operand gives the address whose value gives the address of the value to be loaded.
(indirect addressing)

b)

	ACC	Mem.			
		810	811	812	813
		28	41	0	0
28					
29				29	
41					
70					70