

كوييزات عملي

تجميع :

نور الجفري & فاطمة عاشور

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convert the following:

1) $(1110111000111.110011)_2 = ()_8$

2) $(A8C.34)_{16} = ()_{10}$

$16^2 \quad 16^1 \quad 16^0 \quad 16^{-1} \quad 16^{-2}$

~~$10 \times 256 + 8 \times 16 + 12 \times 1 + 0.34 \times 0.0625 = 2560 + 128 + 12 + 0.1875 = 2692.1875$~~

Find the following

1- $1101 + 10111 =$

3- $11010 - 1001 =$

convert the following:

1) $(1101011001.0000111)_2 = ()_{16}$

$0011 / 0101 / 1001 / .0000 / 1110$
 $3 \quad 5 \quad 9 \quad .0 \quad E = (359.0E)_{16}$

2) $(441.126)_8 = ()_{10}$

$4 \quad 4 \quad 1 \quad . \quad 1 \quad 2 \quad 6$
 $8^2 \quad 8^1 \quad 8^0 \quad 8^{-1} \quad 8^{-2} \quad 8^{-3}$

$1 \times 8^0 + 4 \times 8^1 + 4 \times 8^2 + 1 \times 8^{-1} + 2 \times 8^{-2} + 6 \times 8^{-3} =$
 $1 + 32 + 256 + 0.125 + 0.03125 + 0.005859375 = 288.1621$

Find the following

1- $1101 + 1001 = 10110$

2- $1010 - 111 = 0011$

1

$$\begin{array}{r} 1101 \\ + 1001 \\ \hline 10110 \end{array}$$

2

$$\begin{array}{r} 1010 \\ - 0111 \\ \hline 0011 \end{array}$$

Answer the following questions:

Q1)-

i)- Draw a logic circuit (network) and truth table:

a)- $(A+C)(\overline{B+A})\overline{C}$

ii)- A system used 3 switches A,B,C a combination of switches determines whether $x=1$ depending on contain conditions ,shown in the following table :

input	Binary values	Condition in system
A	1	$A > 1000$
	0	$A \leq 1000$
B	1	$B > 750$
	0	$B \leq 750$
C	1	$C > 15$
	0	$C \leq 15$

$X=1$ occurs when:

Either $A \leq 1000$ and $B \leq 750$ and $C > 15$

or $A > 1000$ or $B > 750$

Draw the logic circuit and truth table to show all the possible situations for above system



Model (A)

Examiner: Khadega Ali Binomar Baomar

Level: LEVEL 2

Department: IT

Subject: computer organization

Answer the following questions:

Q1)-

i)- Draw a logic circuit (network) and truth table

a)- $BA + \bar{A}C + \bar{B}C$

ii)- A system used 3 switches V, T, S a combination of switches determines whether $x=1$ depending on contain conditions, shown in the following table :

input	Binary values	Condition in system
V	1	$V > 1000$
	0	$V \leq 1000$
T	1	$T > 750$
	0	$T \leq 750$
S	1	$S > 15$
	0	$S \leq 15$

$X=1$ occurs when:

Either $V > 1000$ or $S > 15$

Or $T > 750$ or $S \leq 15$

Or $V \leq 1000$ and $T > 750$

Draw the logic circuit and truth table to show all the possible situations for above system.

$$(V \text{ OR } S) \text{ OR } (T \text{ OR } \bar{S}) \text{ OR } (\bar{V} \text{ AND } T)$$

$$(V + S) + (T + \bar{S}) + (\bar{V} \cdot T)$$

V	T	S	\bar{V}	\bar{S}	$V+S$	$T+\bar{S}$	$\bar{V} \cdot T$	$(V+S) + (T+\bar{S}) + (\bar{V} \cdot T)$
0	0	0	1	1	0	1	0	1
0	0	1	1	0	1	0	0	1
0	1	0	1	1	0	1	1	1
0	1	1	1	0	1	1	1	1
1	0	0	0	1	1	0	0	1
1	0	1	0	0	1	0	0	1
1	1	0	0	1	1	1	0	1
1	1	1	0	0	1	1	0	1



Examiner: Khadega Ali Binomar Baomar

Model (B)

Level: LEVEL 2

Department: IT

Subject: computer organization

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Answer the following questions:

Q1)-

i)- Draw a logic circuit (network) and truth table:

a)- $A + (\overline{B} \overline{C} A)$

ii)- A system used 3 switches A,B,C a combination of switches determines whether $x=1$ depending on contain conditions, shown in the following table :

input	Binary values	Condition in system
A	1	$A > 1000$
	0	$A \leq 1000$
B	1	$B > 750$
	0	$B \leq 750$
C	1	$C > 15$
	0	$C \leq 15$

$X=1$ occurs when:

Either $A > 1000$ and $B > 750$

Or $A \leq 1000$ and $C \leq 15$

And $A > 1000$ and $C > 15$

Draw the logic circuit and truth table to show all the possible situations for above system.

$$(A \cdot B) + (\overline{A} \cdot \overline{C}) \cdot (A \cdot C)$$

A	B	C	\overline{A}	\overline{C}	$A \cdot B$	$\overline{A} \cdot \overline{C}$	$(A \cdot B) + (\overline{A} \cdot \overline{C}) \cdot (A \cdot C)$
0	0	0	1	1	0	1	0
0	0	1	1	0	0	0	0
0	1	0	1	1	0	1	0
0	1	1	1	0	0	0	0
1	0	0	0	1	0	0	0
1	0	1	0	0	0	0	0
1	1	0	0	1	1	0	1
1	1	1	0	0	1	0	1



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Day and Date: 14/1/2021

Examiner: Khadega Ali Binomar Baomar

Time allowed: 1.15

Exam Semester: The First

Level: LEVEL 2

Department: IT (General)

Subject: computer organization

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(14)

Answer the following questions:

Q1)-

i)- Draw a logic circuit (network):

a)- $AC + AB + \overline{AC}$

2

b)- $(\overline{A} + \overline{B}) \overline{C} + ABC$

2

ii)- A system used 3 switches A,B,C a combination of switches determines whether $x=1$ depending on contain conditions, shown in the following table :

input	Binary values	Condition in system
A	1	$A > 1000$
	0	$A \leq 1000$
B	1	$B > 750$
	0	$B \leq 750$
C	1	$C > 15$
	0	$C \leq 15$

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$X=1$ occurs when:

Either $A \leq 1000$

Or $B > 750$ and $C \leq 15$

Or $A > 1000$ and $C > 15$

Draw the logic circuit and truth table to show all the possible situations for above system.

Q2) - find the following:

C	+	B	-	2010	=	2011
12		3		6		

MVJ C, 12H
MVJ B, 3H
MVJ A, 6H
STA 2010H
MOV D, A
MOV A, C

ADD B
SUB D
STA 2011H
HLT

5

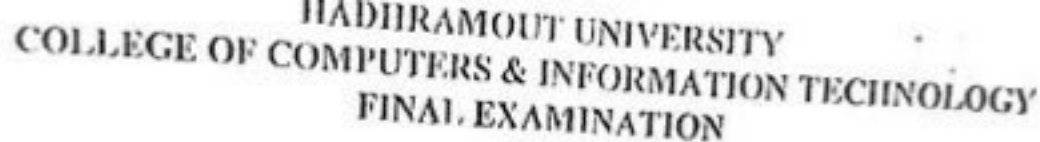
GOOD LUCK

اختبار نهائي عملي

تجميع :

نور الجفري & فاطمة عاشور

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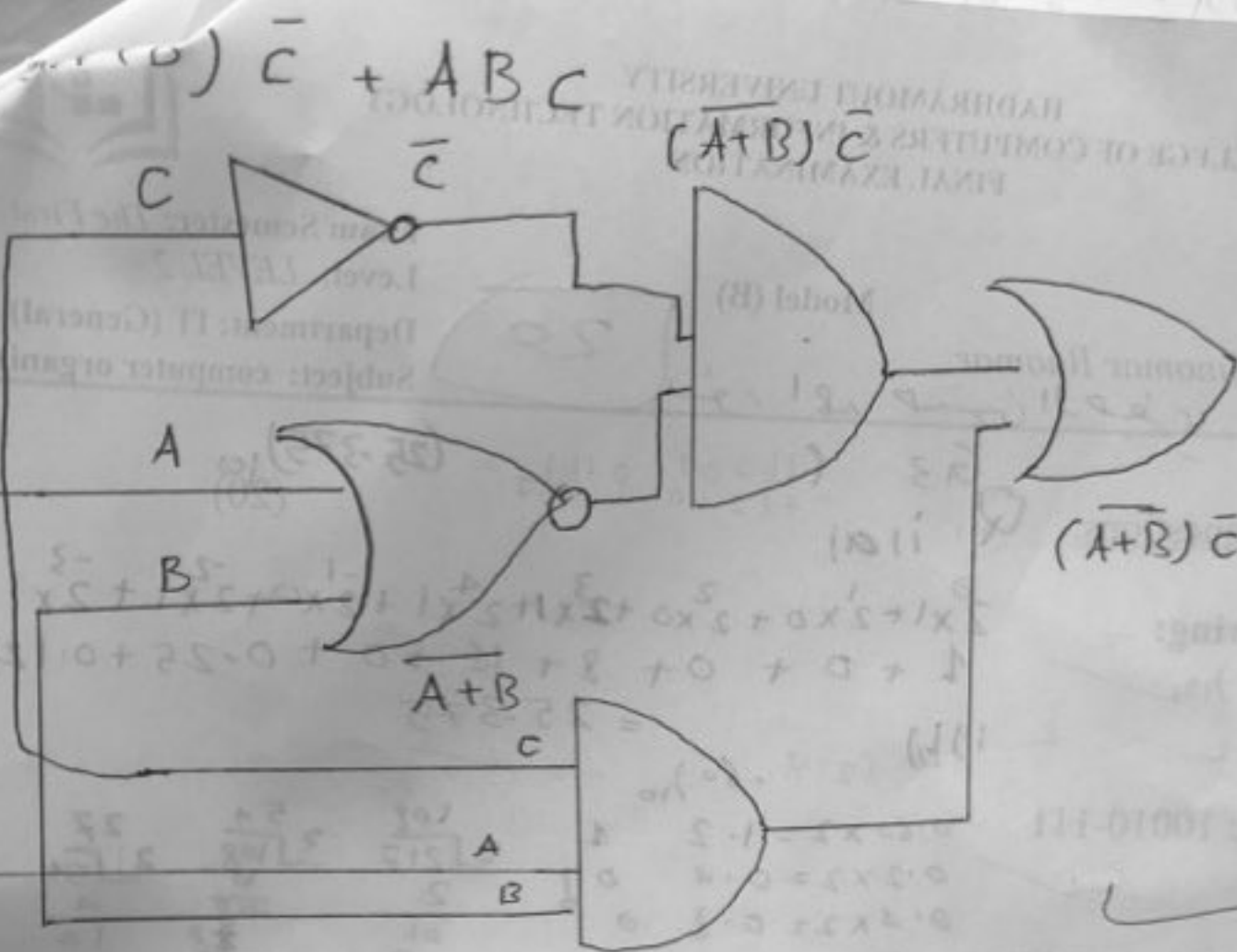


Subject: computer organization

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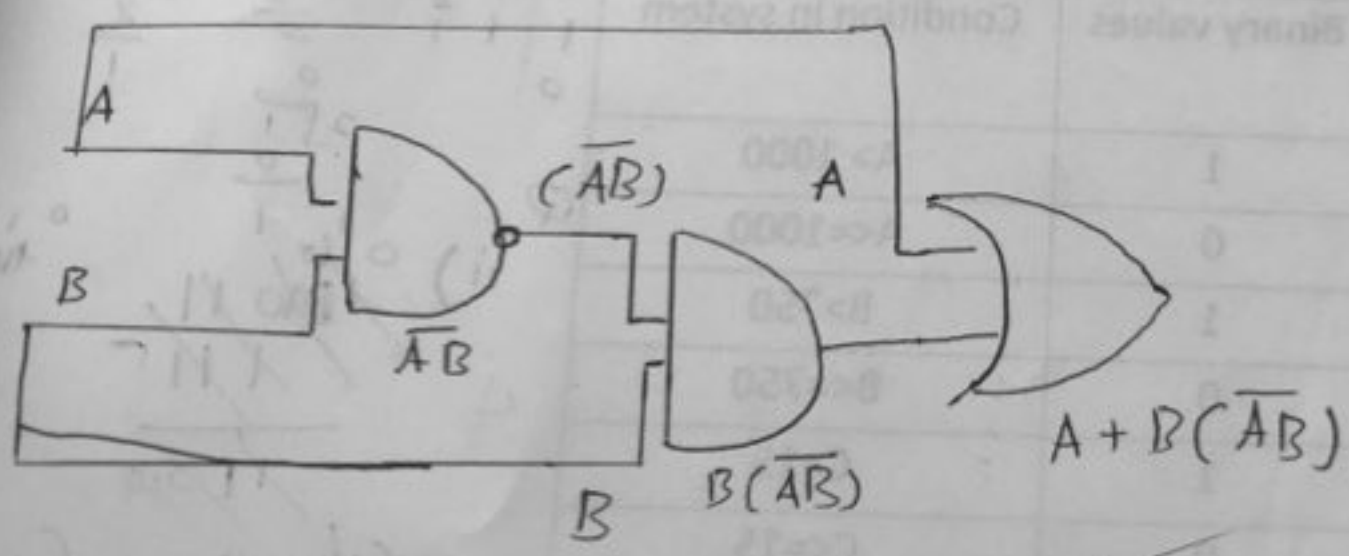
movi a, 8
sta 2011h
adi 4h
movi e, 10
sub e
sta 2015h
hit

```



Handwritten logic expression: $(\bar{A} + \bar{B})\bar{C} + ABC$

Handwritten logic expression: $A + B(\bar{A}\bar{B})$



Q2

ii) $A > 1000$ and $C > 15$ (AC)or $B \leq 750$ and $C \leq 15$ and $A \leq 1000$ ($\bar{B}\bar{C}\bar{A}$)

$$(AC) + (\bar{B}\bar{C}\bar{A})$$

$$\begin{matrix} 3 \\ 2 = 8 \end{matrix}$$

A	B	C	\bar{A}	\bar{B}	\bar{C}	AC	$\bar{B}\bar{C}\bar{A}$	$(AC) + (\bar{B}\bar{C}\bar{A})$
0	0	0	1	1	1	0	1	1
0	0	1	1	1	0	0	0	0
0	1	0	1	0	1	0	0	0
0	1	1	1	0	0	0	0	0
1	0	0	0	1	1	0	0	0
1	0	1	0	1	0	1	0	1
1	1	0	0	0	1	0	0	0
1	1	1	0	0	0	1	0	1

