PARTON AND AND AND AND AND AND AND AND AREA AND

this community in the control of the first beautiful from the second of the second of

PART 151 ANDRES AND PRESENT FACTORING

THE

ATTAL SALES

Huber Humber 1131313

2 ANNIHOLE ALL SHIPS THINK

E SETTION & SHOW THE ANOTHER THAT AND THREE TO ANSWER

माराम संय महार वार्ष हो से हरार वर्ष सवसहर्त ह

THE STREET FOR THE SECOND CHEST PROPERTY OF THE PERSONS

Diagnal effective a very traparant rate in today a electronic system coupling of in almost every facet of electronics, excluding,

- a) Comed management
- B) Chiminimonium
- El Componia
- Amphireanna of weak signals

A feate date is

- A special type of amphino chemic designed to amphino volta corresponding to binary 1's and 6's
- A special type or amplifies enemy designed to amplifies com-
- A special type of volume amplified enterin designed to general
 - A special type of amplified effects designed to needly and got stands emicaping the broad 1's and 1's
- Which of the following statements these Next describe an advantage to the feel makes and the feel makes and

- d) In digital systems, that the circuitry used to go
- e) None of the above
- What type of logic gate is this?
 3 Inputs OR
 b) 3 Inputs AND
 - - c) 3 Inputs NOR
 - 3 Inputs NAND none of the above

-	W.	F. C.	Marie Li	10	
Acres	1	0			
9	-	1 1		5	
0	9	6		1	
()	3	1 3 1		- 1	
2	1	1.0		1	
7	6	0			
100	1	1		1	
1	0	1-2-1		1	
	1 1	0			
		4			

Output

What function is implemented by the circuit shown

$$b)(x+y)z$$

$$d)\bar{x}+\bar{y}+z$$

What function is implemented by the circuit shown

$$a)x + y + z$$

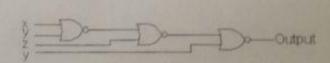
6.

$$d)x+y+z$$

What function is implemented by the circuit shown

$$c)\bar{x}.\bar{y} + \bar{y}.\bar{z}$$

$$d)x.y+y.z$$



Use Boolean algebra to simplify the logic function $A + (\tilde{A}.B)$ 8.

valuations for input switches A, B and C that generate a 1 at the output: (A-1, B=1, C=0), (A=1, B=0, C=1), (A=0, B=1, C=1),
i. Complete the truth table
ii. Write the Boolean expression
iii. Draw the Logic circuit

F. K AMPONG

A	B	c	untput
0	0	0	
1	1	0	
1	0	1	
0	1	1	

Appendix A

Single-Variable Theorems

1a.
$$x \cdot 0 = 0$$

1b.
$$x + 1 = 1$$

$$2a. \quad x \cdot 1 = x$$

valuations for input switches A, B and C that generate a 1 at the output: (A-1, B=1, C=0), (A=1, B=0, C=1), (A=0, B=1, C=1),
i. Complete the truth table
ii. Write the Boolean expression
iii. Draw the Logic circuit

F. K AMPONG

A	B	c	untput
0	0	0	
1	1	0	
1	0	1	
0	1	1	

Appendix A

Single-Variable Theorems

1a.
$$x \cdot 0 = 0$$

1b.
$$x + 1 = 1$$

$$2a. \quad x \cdot 1 = x$$

March 2014

TIME: 1 Hr

Answer all questions Answer all questions

Answer section A on the question paper and section B in your answer booklet.

Answer section A ppendix A - list of Boolean algebra theorems) Answer set (Find attached: Appendix A - list of Boolean algebra theorems) Section A [10 Marks]

- Digital circuits play a very important role in today's electronic systems. They are employed in almost every facet of electronics, excluding, a) Control Instrumentation

 - b) Communication
 - c) Computing
 - Amplification of weak signals
 - None of the above
- A logic gate is:
 - A special type of amplifier circuit designed to amplifier voltage signals corresponding to binary 1's and 0's.
 - A special type of amplifier circuit designed to amplifier current signals b) corresponding to binary 1's and 0's.
 - A special type of voltage amplifier circuit designed to generate voltage signals corresponding to binary 1's and 0's. c)
 - A special type of amplifier circuit designed to accept and generate voltage signals corresponding to binary 1's and 0's.
 - None of the above e)
- Which of the following statements about a logic gate is false?
 - a) Gate circuits are most commonly represented in a schematic by their own unique symbols rather than by their constituent transistors and resistors.
 - b) Logic circuits provide solution to a problem. They implement functions that are needed to carry out specific tasks
 - Within the framework of a computer, logic circuits do not provide complete capability for execution of programs and processing of data.

March 2014

TIME: 1 Hr

Answer all questions Answer all questions

Answer section A on the question paper and section B in your answer booklet.

Answer section A ppendix A - list of Boolean algebra theorems) Answer set (Find attached: Appendix A - list of Boolean algebra theorems) Section A [10 Marks]

- Digital circuits play a very important role in today's electronic systems. They are employed in almost every facet of electronics, excluding, a) Control Instrumentation

 - b) Communication
 - c) Computing
 - Amplification of weak signals
 - None of the above
- A logic gate is:
 - A special type of amplifier circuit designed to amplifier voltage signals corresponding to binary 1's and 0's.
 - A special type of amplifier circuit designed to amplifier current signals b) corresponding to binary 1's and 0's.
 - A special type of voltage amplifier circuit designed to generate voltage signals corresponding to binary 1's and 0's. c)
 - A special type of amplifier circuit designed to accept and generate voltage signals corresponding to binary 1's and 0's.
 - None of the above e)
- Which of the following statements about a logic gate is false?
 - a) Gate circuits are most commonly represented in a schematic by their own unique symbols rather than by their constituent transistors and resistors.
 - b) Logic circuits provide solution to a problem. They implement functions that are needed to carry out specific tasks
 - Within the framework of a computer, logic circuits do not provide complete capability for execution of programs and processing of data.

- d) In digital systems, the convenient reality of name (192(3))? Valtage levels is that the circuity word to getterate, manupulate and store them is very simple that the circuity word to getterate, manupulate and store them is very simple.
- e) None of the above
- What type of logic gate is thus?

 3 inputs OR

 - b) 3 Inputs AND

 - c) 3 Inputs NOR
 d) 3 Inputs NAND
 none of the above

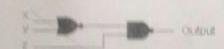
800	1.35	LES E	W 12 1 1 1
		8.0	1
		1	1
		9	1
			100
			1
1			1
			1

What function is implemented by the circuit shown

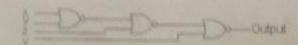
What function is implemented by the circuit shown

$$u)x + y + z$$

$$d)x+y+z$$



What function is implemented by the circuit shown



Use Boolean algebra to simplify the logic function A + (A B)

- d) In digital systems, the convenient reality of name (192(3))? Valtage levels is that the circuity word to getterate, manupulate and store them is very simple that the circuity word to getterate, manupulate and store them is very simple.
- e) None of the above
- What type of logic gate is thus?

 3 inputs OR

 - b) 3 Inputs AND

 - c) 3 Inputs NOR
 d) 3 Inputs NAND
 none of the above

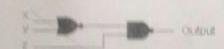
800	1.35	LES E	W 12 1 1 1
		8.0	1
		1	1
		9	1
			100
			1
1			1
			1

What function is implemented by the circuit shown

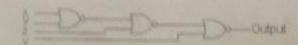
What function is implemented by the circuit shown

$$u)x + y + z$$

$$d)\bar{x} + \bar{y} + \bar{z}$$



What function is implemented by the circuit shown



Use Boolean algebra to simplify the logic function A + (A B)

30. Simplify the engression (4-C/H-0)-/
(40) AC-80
(5) AC-80
(6) AC-80
(6) AC-80

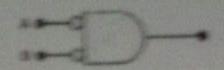


Figure 1

Figure 1 is the alternate logic gare representation for a

(bit NOTE

(bit NOTE

SECTION IS THEORY: ANSWER THIS SECTION IN YOUR A

- UR. For the coront in figure 2 perform the following:
 - Write down the Boolean expression

N. E. W. C.

- II. Simplify the Boolean expression
- III. Draw the simplified circuit

- A standard way of representing the bolianne of logic circuits in an use:

 (b) Boolean algebra theorems and axioms
 (c) Universal gates
 (d) Truth tables

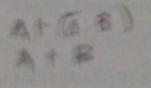
 The output of an AND gate with three inputs. A. B. and C. is HIGH when

 (d) A = 1, B = 1, C = 0

 (e) A = 0, B = 0, C = 0

 (f) A = 1, B = 1, C = 1

 (d) A = 1, B = 0, C = 1
- 6. If a 3-input NOR gate has eight input possibilities, how many of those powill result in a HIGH output?
 - @
 - (9) 2
 - 10)7
 - (d) 8
- 7. Lise Boolean algebra to simplify the logic function A + (A.B)
 - (a) AB+A
 - OA+B
 - (E) A+A
 - (d) A.A
- 8. Use Boolean algebra to simplify the logic function A.(B + \$ C).
 - (B+C)
 - (b) A + 8
 - (c) A.C + B
 - (d) A + B.C



Standard and of responsiting the religions of large circulations are (b) Briolean algebra theorems and stroms (d) Touth tables The output of an AND sale with three inputs A. B. and C. is FRIGHT when (3) A = 1, B = 1, C = 6 51 A - 0 B - 0 C - 9 (6) X = E B = E C = E (d) A=1, B=0, C=1 If a 3-impor NOR gate has eight unput possibilities, how many of those par will result in a HIGH conser? (3) 8 Use Boolean algebra to simplify the logic function A - (# 8) X8 (8.8) B ABERA BA-B CA SHR (d) 22 Use Brolean algebra to simplify the logic function AUB- \$ Co. (3) A. (3-C) (B) R-3 8 x C + B (B) X+BC

となるとなった ちゃちゃちゃち

the Communication of the Commu

SEPPINE VENE

10110

Attivit 2012 to

turbs Yumber 1151513

extense in the number of

E RECTION & SHIPE THE FACTOR OF THE FARMER TO ANSWER AND

AFFERT AND HEAVE WITH A SECTION ASSESSMENT A

THE STREET PROPERTY AND SECURE AND SECOND SE

ingual currents that a vest impureau rule in each a exclusive statement complexed in almost every freel or electronics, excluding,

- a) Committee manufactured (e)
- A) Commissioners
- El Componio
- Amphiteanon of weak signals

A lease state is

- a) A special type of amplitude electric designed to amplitude volta
- a) A special type or amplifier electin designed to amplifier current of and the
- A sharing rate or copies and the chang personal to beneat
 - d) A special type of amplified effects destance to necessis and go

Which of the inflawing statements does NOT describe an advantage technology?

1 Use Blooken algebra to simplify the logic timetical 4 - (4 3) 五十年 五年

五十年次 (原

1

四十五四

(五)

96 Jee Bookers referre to samplety the logic francis & B - B C -一位 一根下

年一年(明 ((〇)十個)宋(周

以出一年(日 用一口家(用

Simplify the logic limited 一一世世 B=(B+4)(B+C)

2

學學等 出了我 不属于年

告述 一萬七 世帯工杯 九二年 大

ストナイ

金 二十五

田 田 田

也一个田二田心

10. Simplify the expression (4-CH4-d)-F

(10) AC-20

(11) AC-20

(12) AC-30

(13) AC-30

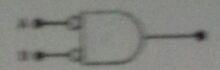


Figure 1

Figure 1 is the alternate logic gate representation for a

(a) NOR.

(b) NOR.

(c) NOT

SECTION IS THEORY: ANSWER THIS SECTION IN YOUR ABOUNDERS

- UZ. For the coronit in figure 2 perform the following:
 - Write down the Boolean expression.

九五年後

- E. Simplify the Boolean expression
- III. Draw the simplified circuit

\$(1 H) HE 31

XHERRISH .

BO (A1)

18

ulative

DcMorgan's The

Associativa

Simple: Waterlie Harosons

水(0=0 1140 a deal 280 J. J. F. X 380 # # # X 499. 490 334

Theorameri	Three-Nariable: Expertise	
140	オーカニカータ	CHR
+435	ver ver ver	

x -1(x -2) = (x -31) -2 220

x4(x+3)=(x+3)+3 780.

A. (ydg)=4. yd4.2 Distributive 388

* + + + + + (x + 4) · (x + 4) 380

Absorption 发中京·少王多 440

及一(文字等)至文 450.

张·安安·安西米 Combining

((水中部) (水中部) 三米 58b.

668

WENEZ V 660

水井京,外三水井外。 720.

张(後年五)三年八月 190

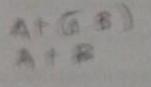
张小司林中一五本京·五五年天·女林京·五 88a.

(x+y)·(x+x)·(x+x)=(x+y)·(x+x) 280

- A standard way of representing the behavior of legic circums in make the frontean algebra theorems and axioms

 (a) Business algebra theorems and axioms
 (b) Universal gates
 (d) Truth tables

 The suspect of an AND gate with three inputs. A. B. and C. is HIGH when the first and the fi
- 6. If a 3-input NOR gate has eight input possibilities, how many of those powell result in a HIGH output?
 - (a)
 - (9)2
 - 1017
 - (d) 8
- 7. Lise Boolean algebra to simplify the logic function A + (A B)
 - (a) AB+A
 - O A+B
 - (E) A+A
 - (d) A.A
- 8. Use Boolean algebra to simplify the logic function A.(B + B.C).
 - (A(B+C)
 - (b) A + 8
 - (c) A C + B
 - (d) A + B.C



	(b) Shalisan algebra between and more	m5	
	(C) Universal gates		
\$.	The output of an AND gase with three to AND and with three to AND and an AND an AND AN	13 C C C C C C C C C C C C C C C C C C C	
1	Hardingar NOR gare has eight money will result in a BIGH (company)	per Min	es how many of
	a		
	(6)/2		
	(6)77		
	(6)/8		
		ania Han	
The	Use Blooken objetimen simplify the i	DE COM	2
	(制) 从围+星		AH(图图)
	Q 48+B		MIR
	(出) 第一条		
	(田) 亚亚		
2	Use Blooken algebra to simplify the	legic fix	serion A.(B.+
	(D)(4(B)-(C))		路十四三
	(B) 4-3		

(B) AC-B

Street and of representing the settanter of ingle chester is usual id Boolean stockes theorems and spinms (d) Totals tables The comput of an ANTO gate with three inputs! A. B. and C. is THIGH when (3) A = 1, B = 1, C = 0 图 光一度 第一位 在一位 6 A-13-10-1 (d) A = 1 B = (C = 1 If a 3-import NOR gare has eight import possibilities, how many of those per will reput in a HIGH ourser? (318) Use Boolean algebra to simplify the logic function A - (# 8) 2563 (3) A. B. - 2 1 R-B CT XXX (d) 4.15 Use Boolean algebra to simplify the logic function A.(B+3.0). (a) AB-C (B) R+3 10 x 6 + 3 (8) A+BC

10. SIMPLES HIS EXPLICATION (\$1550 P) - 5

(4) 16 1 16 1

(6) 16 1 16 1

(6) 16 1 16 1

(7) 1 6 9

(8) 16 1 16 1

(8) 16 1 16 1



11. Figure 1 is the alternate logic gate representation for a

(a) NOR

(B) AND

(E) BHE 21

EN NAME

SECTION B THEORY: ANSWER THIS SECTION IN YOUR A

12. For the circuit in figure 2 perform the following:

1. Write down the Boolean expression

11. Simplify the Boolean expression

III. Draw the simplified circuit



- Use Boolean algebra to simplify the logic function $\,A.(B+\,\overline{\!{\it B}}\,.C)$.
 - (a) A.(B+C)
 - (b) A + B
 - (c) A.C + B
 - (A+B.C
- Simplify the logic function $F = (B+A) \cdot (B+C)$.
 - (a) BHA.C

 - (b) B.A+B (A+B).(B.C)
 - (d) C+A.B.

SECTION B [10 MARKS]

ANSWER ALL QUESTIONS FROM THIS SECTION IN YOUR ANSWER BOOKS

- Draw the Logic circuit that would be used to implement the following Boolean equations
 - a) P = (AC + BC)(A + C)
 - b) R = BC + D + AD
 - c) S B(A + C) + AC + D

		OUTPUT	
	В	A	Y.
4	0	0	1
9	0		0
9	10	0	8
	1		1
	0	0	0
	0	1	Y -
	1	0	-
			-

Let us assume that we are designing a simple electronic lock. The lock will open only when certain switches are activated. A 1 at the output will open the lock. There are three valuations for input switches A, B and C that generate a 1 at the output: (A-1, B=1, C=0), (A=1, B=0, C=1), (A=0, B=1, C=1),
i. Complete the truth table
ii. Write the Boolean expression
iii. Draw the Logic circuit

F. K AMPONG

A	B	c	untput
0	0	0	
1	1	0	
1	0	1	
0	1	1	

Appendix A

Single-Variable Theorems

1a.
$$x \cdot 0 = 0$$

1b.
$$x + 1 = 1$$

$$2a. \quad x \cdot 1 = x$$

- d) In digital systems, the convenient reality of name (192(3))? Valtage levels is that the circuity word to getterate, manupulate and store them is very simple that the circuity word to getterate, manupulate and store them is very simple.
- e) None of the above
- What type of logic gate is thus?

 3 inputs OR

 - b) 3 Inputs AND

 - c) 3 Inputs NOR
 d) 3 Inputs NAND
 none of the above

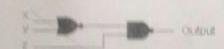
800	1.35	LES E	W 12 1 1 1
		8.0	1
		1	1
		9	1
			100
			1
1			1
			1

What function is implemented by the circuit shown

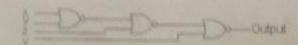
What function is implemented by the circuit shown

$$u)x + y + z$$

$$d)\bar{x} + \bar{y} + \bar{z}$$



What function is implemented by the circuit shown



Use Boolean algebra to simplify the logic function A + (A B)

March 2014

TIME: 1 Hr

Answer all questions Answer all questions

Answer section A on the question paper and section B in your answer booklet.

Answer section A ppendix A - list of Boolean algebra theorems) Answer set (Find attached: Appendix A - list of Boolean algebra theorems) Section A [10 Marks]

- Digital circuits play a very important role in today's electronic systems. They are employed in almost every facet of electronics, excluding, a) Control Instrumentation

 - b) Communication
 - c) Computing
 - Amplification of weak signals
 - None of the above
- A logic gate is:
 - A special type of amplifier circuit designed to amplifier voltage signals corresponding to binary 1's and 0's.
 - A special type of amplifier circuit designed to amplifier current signals b) corresponding to binary 1's and 0's.
 - A special type of voltage amplifier circuit designed to generate voltage signals corresponding to binary 1's and 0's. c)
 - A special type of amplifier circuit designed to accept and generate voltage signals corresponding to binary 1's and 0's.
 - None of the above e)
- Which of the following statements about a logic gate is false?
 - a) Gate circuits are most commonly represented in a schematic by their own unique symbols rather than by their constituent transistors and resistors.
 - b) Logic circuits provide solution to a problem. They implement functions that are needed to carry out specific tasks
 - Within the framework of a computer, logic circuits do not provide complete capability for execution of programs and processing of data.

- Use Boolean algebra to simplify the logic function $\,A.(B+\,\overline{\!{\it B}}\,.C)$.
 - (a) A.(B+C)
 - (b) A + B
 - (c) A.C + B
 - (A+B.C
- Simplify the logic function $F = (B+A) \cdot (B+C)$.
 - (a) BHA.C

 - (b) B.A+B (A+B).(B.C)
 - (d) C+A.B.

SECTION B [10 MARKS]

ANSWER ALL QUESTIONS FROM THIS SECTION IN YOUR ANSWER BOOKS

- Draw the Logic circuit that would be used to implement the following Boolean equations
 - a) P = (AC + BC)(A + C)
 - b) R = BC + D + AD
 - c) S B(A + C) + AC + D

		OUTPUT	
	В	A	Y.
4	0	0	1
9	0		0
9	10	0	8
	1		1
	0	0	0
	0	1	Y -
	1	0	-
			-

Let us assume that we are designing a simple electronic lock. The lock will open only when certain switches are activated. A 1 at the output will open the lock. There are three

- d) In digital systems, that the circuitry used to go
- e) None of the above
- What type of logic gate is this?
 3 Inputs OR
 b) 3 Inputs AND
 - - c) 3 Inputs NOR
 - 3 Inputs NAND none of the above

-	W.	F. C.	Marie Li	10	
Acres	1	0			
9	-	1 1		5	
0	9	6		1	
()	3	1 3 1		- 1	
2	1	1.0		1	
7	6	0			
100	1	1		1	
1	0	1-2-1		1	
	1 1	0			
		4			

Output

What function is implemented by the circuit shown

$$b)(x+y)z$$

$$d)\bar{x}+\bar{y}+z$$

What function is implemented by the circuit shown

$$a)x + y + z$$

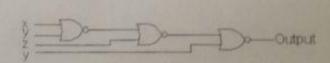
6.

$$d)x+y+z$$

What function is implemented by the circuit shown

$$c)\bar{x}.\bar{y} + \bar{y}.\bar{z}$$

$$d)x.y+y.z$$



Use Boolean algebra to simplify the logic function $A + (\tilde{A}.B)$ 8.