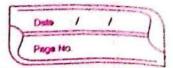
		Saroj Dahal 191725										
		Logic Assignment.	Page No.									
	1.	Which of these sentences are propositions?	Which of these sentences are propositions? What are the									
7		truth values of those that one propositions?										
			77									
	9	Boston is the capital of Manachwetts.										
Ar	ns.	It is proposition.										
		It's Truth value is T.										
1	b).	Miami is the capital of Florida.										
A	Ŋ.	It is proposition.										
		It's Truth value is f.										
C	2)	2+3=5										
An	g.	It is proposition.										
		It's Truth value is T.										
d:	<b>)</b>	5+7 =10.		-								
AN		It is proposition.										
	-	It's Truth value is F.	With the last with the last with the last	THE PARTY OF THE P								
Ø	,	x+2 =11.										
Ans.	-	H is functional prosition.		1900 Marie								
- 716.		is truth value can't be soil unless domain	distances	or value								
	_	x is provided,	ceraconoc	and the same of th								
	9	r o provided,	and the second second second second second	Acres and the second								
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も		asword this quartern.		The state of the s								
Ans	L	t is not proposition.	THE SAME OF THE PARTY OF THE PARTY.	and the second s								
100												



a. What is the negation of each of these propositions? a) Jenniten and Teja ane friends. Jennifor and Teja arrend friends. Ans. there are 13 items in a baker's dozen. there arenot 13 Hems in a baker's dozen. ANS. or Abby sent more than 100 text monages everyday. AN Abby didn't sent more than 100 text merciges everyday. d) 121 is a posifeet square. Ans 121 is not a perfect square. 3.e Let p and q be the proportions p: I bought a lottery tuket this week. Q: I won the million dollar jackpot. Express each of these propositions as an English sentence. NP. : I didn't buy a lottony ticket this week. PVQ: b. P-19: If I buy a Lottery ticked this week then I will win the million dollar jackpot. PAQ: I will boight a lottery ticked this week and wen the d. million dollar jackpot. e. Pt-> q: Buying a lottery ticket is ne cereary and sufficient for wining million dollar Jackpot



npana: If I don't buy a lottery ticket this week than I won't win the million dollars jackpot. g. NP ANQ: I didn't buy a lottery tickelthis week and didn't win the million dollar jackpot NP V (PM9): I don't buy a lottery ticket this week and win the militan dollar jackpot 4. Let p and of be the propositions p: It is below treezing. 2: It is snowing. Write these propositions using p and 2 and legical connectives (including negations). It is below preezing and snowing: PAQ It is below preezing but not snowing: PA~9 It is not below freezing and it is not snowing: N (PAQ) It is either snowing a below freezing (or both): 9 UP. If H is below freezng, it is also snowing: P -> 9 Either it is below freezing on it is snowing, but it is not snowing if this below freezing: that it is below freezing is necessary and sufficient for it to be snowing: P4>9 5. Construct a truth table for each of the following

statements.

			Saroj l	Daha	al 1917	725	; 	De	nte /	<u>-</u>	
a	P→~q	,.				15	1. 11-16	A (		i.t	
	P T F F	Q T F T	~q F T F	P	7 T T	1					
<b>b</b> .	NP LD 9	2				75	20	10	- 23		
	P T T F		FF	-		F T	) '(				
C-	(P-72) V	J (~P.					NP-)			Dyl	
	P	9	-	79	1 NP	- 1	~ T	2	(19)	F	N1 / L
	T	F F F	1	F T	F T T		T F			T T	
							598				- 23/23

					Sar	oj Da	aha	I 19	9172	5		The second secon	
											Pege N		
	d.	(P-)	2) n (P	NP-	9)							if you	
		PIG			1P-72 ~P N			NP	<b>→</b> 2	1	p-)q.)n	(~0+2)	
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	$-\parallel$	7			F	-	F	-	T			F	
	FT			7	-	T	- Independent	T			T		
		F		F	7	-	T	- Constitution	F	7	The same of the sa	F	portion and
6	e. (P6>9) v (p ~P6-9)										* 34		
	0 0 1				<del>(</del> )9	100 1	10	Tai	04		101	2010	12104.20)
-	P 9 P			₩ 1	_	P	F		۳.	2 (P←>2) V		(24-14)	
	+	<u> </u>	1	+	FF		F F	T				T	
	+	F	T		F	-+	Γ	67	<del>'</del>			<u>,</u>	
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	$\parallel$			th the service of the		Aparta at a Aparta						National Parketing	
f.	(	~P+	→ ~q	.)(-	(14	<b>→2</b> )	)		1	y- 71	V	No.	1 13
										Commence Control and	and a suit of the supplements of	NHOO WATER TO SEE	
(Edv.)	P		9	~	P	nq	0	٢+:	220	Pt	-72	(NPC	12) (141)
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	T		F	F		T	S. C.	F		F	•		T
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513 544 - 2	F		F	7		7		T		T		9	T
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				i Person									
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6.	show that	~(NP) and	P	and	Logically	equivalent.
and the latest designation of the latest des	A REAL PROPERTY OF THE PERSON NAMED IN COLUMN 2 IN COL					

AN

	P	NP	~ (ab)	Part of	1
-let-	Т	F	7		
	F	T	F.	7 7	T

from above truth table  $\sim (\sim P) \equiv P$ 

7. Use a truth table to recity the first De Morgan Law ~ (PAQ) = NPVNQ.

P	19	PA2	~(PA2)	NP.	~q	NPVNQ	-
T	T	T	F	F	F	F	
T	F	F	T	F	CT!	OT W	-
F	Т	F	T	T	F	7	
F	F	F	(T-)	T	17	6.T ( -)	10000
-	out a consider for the delivery		-				

Here, ~ (PAQ) = ~PV~Q.

2. Determine whether (NPMP-92)) - NQ is tautology.

-	2	19		P	P-19	(~P~(P-2))	NO.	(~PA(P+2))+~2
_	r	T		F	€ 7.0	Pr Dust A L	F	T
-	r	F		F	F	F	T	T
1	5	-	F	T	Tir	TATE	F	() . Fr ()
	F	1		T	(0.00	A T MARKET	T	T
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TAbove trum table do earl show tautology

	Denta	1	1	7
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9. Determine whether (~A.n(P-)a))-> ~P is a tauto logy.

II									
P	9	ng	P-92	(nen(P-)2))	NP	(ngn(P+9))			
<b>T</b>	T	F	T	F	F	T			
T	F	T	F	F	F	T			
F	T	F	Т	F	T	T			
F	FI	CAF	J.	A The Supple	Т	I.			
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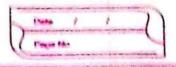
From above touth table, (NAN(P->2))->~P is a tentology.

- tiend nium of all integers, what one these touth values?
  - a) (010) => 1>0 is true.

. >

- b) \$\phi(-1) \Rightarrow -1+1 > &x(-1)\$\Rightarrow 0> -2 is true.
- 0. 9(1) => 1+1 > 2x1
  - 3 2>2 · 12 fable
- d)  $\exists x. Q(x) : Because Q(x) is true for some values such as to x = 1, x = -1, so, <math>\exists x. Q(x) \in A$  true.
- bike is testine one some university of the statement is false. It will the statement is false.

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- 11. Exprov each of these statements culty quantifiens
  - a) All dogs have \$1000.

to there is a house that can add.

er Every keals can climb

- a) No monkey can speak French.
- el heno exists a pig that can ewin and outch fish.