

# Assignment

**Subject :**

*DLD*

**Submitted by:**

*Fiaz Ahmad*

**Submitted to:**

*Syeda Zoupash Zahra*

**Reg NO:**

*Fa24-Bse-127*

**Department:**

*Computer Science*

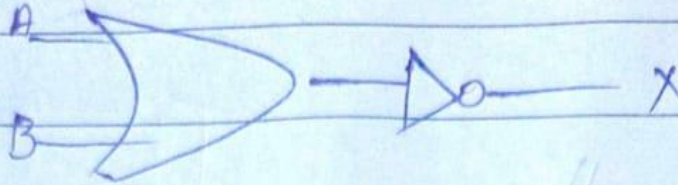
*Comsats Univesity Islamabad*  
*(vehari campus)*

Day: \_\_\_\_\_

# NOR Gate

Date: \_\_\_\_\_

Symbol



Equation:

$$X = \overline{A + B} = \bar{A} + \bar{B}$$

Logic:

1) when one input become 1 then the output become 0

2) when the both input become '0' then the output become '1'

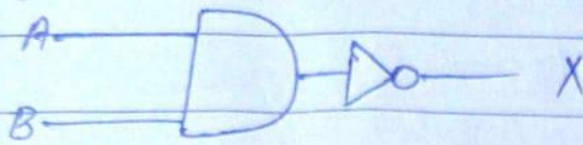
Truth Table

A	B	X
1	1	0
1	0	0
0	1	0



## NAND Gate:

Symbol:



Equation:

$$X = \overline{A \cdot B} = \overline{A} \cdot \overline{B}$$

Logic:

1) when one input become  
'0' then the output become

1

2) when both input become  
1 then the output is

'0'

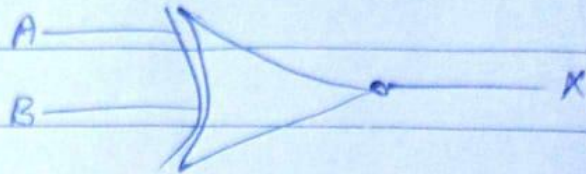
Truth Table.

A	B	X
1	1	0
1	0	1
0	1	1
0	0	1



# XOR

Symbol



Equation:

$$X = A \oplus B$$

$$X = A'B + A.B'$$

Working Logic:

opposite  
be '1'

the

output

have

will

Truth Table:

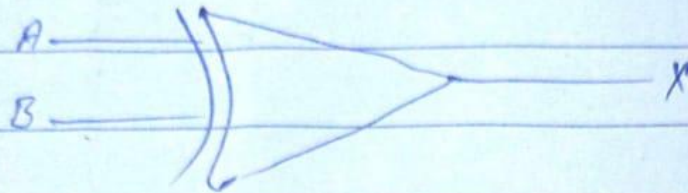
A	B	X
1	1	0
1	0	1
0	1	1
0	0	0

Day: \_\_\_\_\_

## XNOR

Date: \_\_\_\_\_

Symbol:



Equation:

$$X = A \odot B$$

$$X = A' \cdot B' + A \cdot B$$

Working logic:

when the input have opposite the output will be 1

Truth Table.

A	B	X
1	1	1
1	0	0
0	1	0
0	0	1



**Elektronik 2000**  
HISILAN MARKET 18-A HALL ROAD LAHORE PAKISTAN  
W 3722134/17246351 email: elektronik@brain.net.pk  
Web site: www.elektronik-2000.com



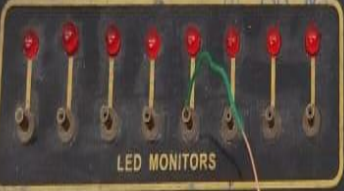
±VE GND -VE  
VARIABLE  $\pm 0-30V$  DC

±VE GND -VE  
FIXED  $\pm 1-15V$  DC

0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

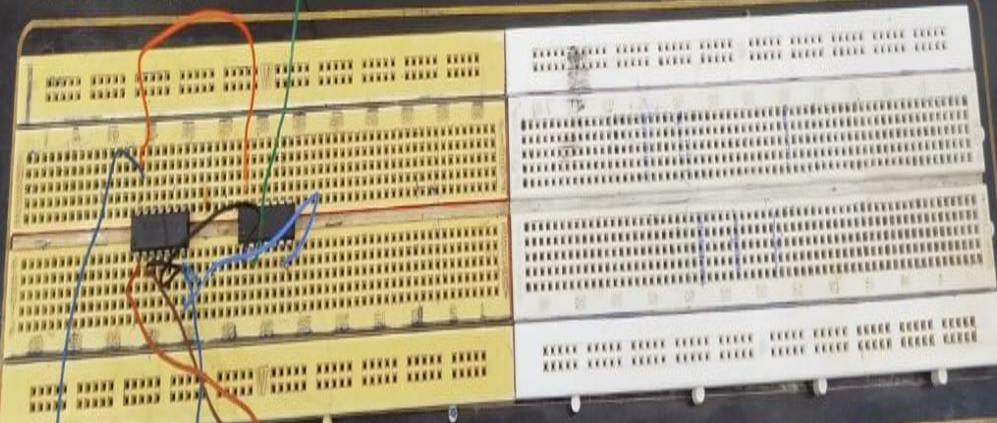


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



LOGIC SWITCHES



PULSER



**Elektronik 2000**

BISMILLAH MARKET 16-A HALL ROAD LAHORE PAKISTAN  
W 3721-344/37248351 email: elektronik@rain.net.pk  
Web Site: www.elektronik-2000.com



POWER



VARIABLE  $\pm 0-30V$  DC



FIXED  $\pm 15V$  DC



0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

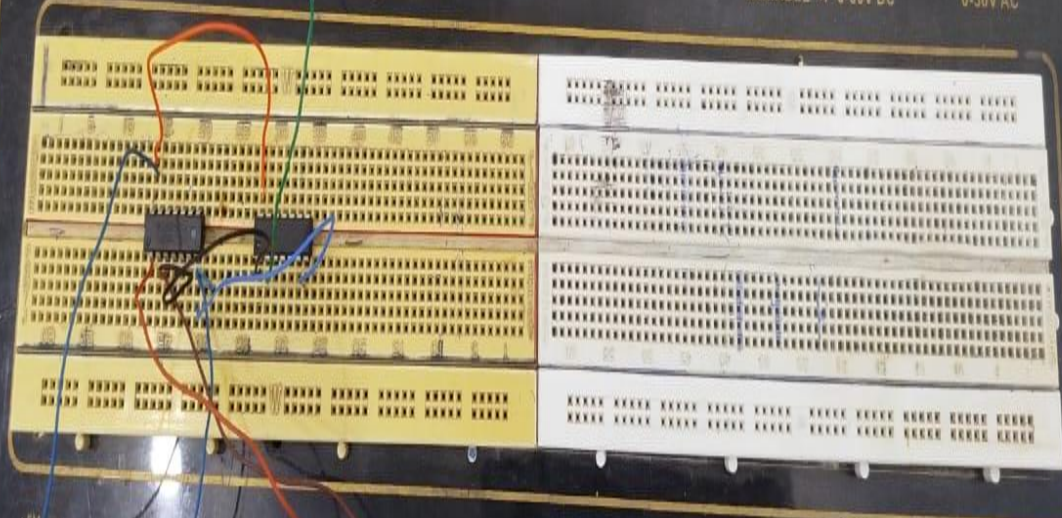


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK

10<sup>4</sup> Hz

10<sup>3</sup> Hz

10<sup>2</sup> Hz

10<sup>1</sup> Hz

1 kHz

10 kHz

100 kHz

1 MHz

10 MHz

100 MHz

1 GHz

10 GHz

100 GHz

1 THz

10 THz

100 THz

1 PHz

10 PHz

100 PHz

1 EHz

10 EHz

100 EHz

1 ZHz

10 ZHz

100 ZHz

1 YHz

10 YHz

100 YHz

1 RHz

10 RHz

100 RHz

1 QHz

10 QHz

100 QHz

1 SHz

10 SHz

100 SHz

1 MHz

10 MHz

100 MHz

LOGIC SWITCHES

+5V

GND

PULSER

1

0

1

0

1

0

1

0

+5V

GND

+5V

GND

+5V

GND

+5V

GND

+5V







**Elektronik 2000**

BIRLAHAR MARKET 10-A HALL ROAD LAHORE PAKISTAN  
W 3727128437 246331 email: vektor@brain.net.pk  
Web Site: www.elektronik2000.com



POWER



VARIABLE +/- 0-30V DC



FIXED +/- 15V DC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE +/- 0-30V DC

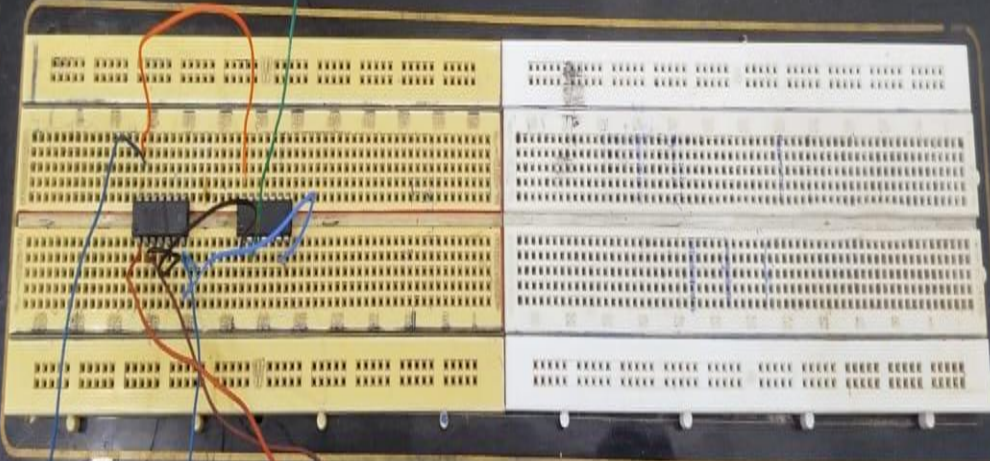


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



LOGIC SWITCHES



PULSER



**Elektronik 2000**

BISMILLAH MARKET 16-A HALL ROAD LAHORE PAKISTAN  
M 37221344 / 7246351 email: elektronik@rain.net.pk  
Web Site: www.elektronik2000.com



POWER



VARIABLE  $\pm 0-30V$  DC



FIXED  $\pm 15V$  DC



0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

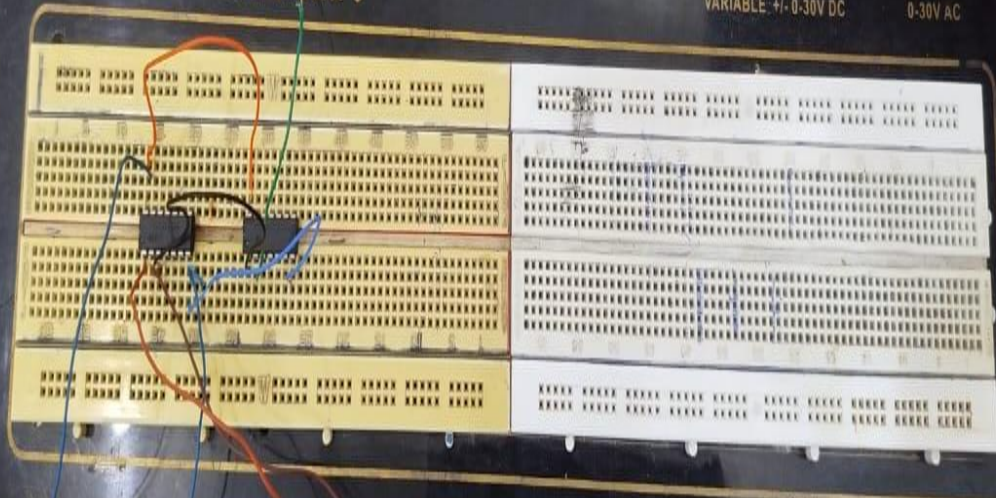


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



LOGIC SWITCHES



PULSER



**Elektronik 2000**

108 MILLAM MARKET TO A HALL ROAD LAHORE PAKISTAN  
W 37221344 37244333 email: elektro@train.net.pk  
Web Site: www.elektronik2000.com



POWER



VARIABLE +/- 0-30V DC



FIXED +/- 15V DC



0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE +/- 0-30V DC

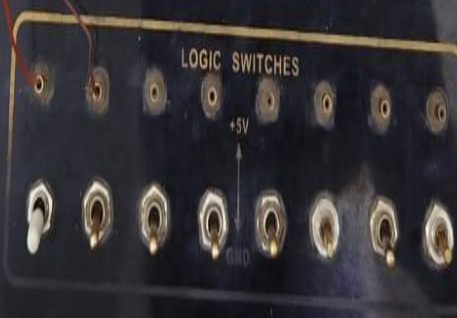
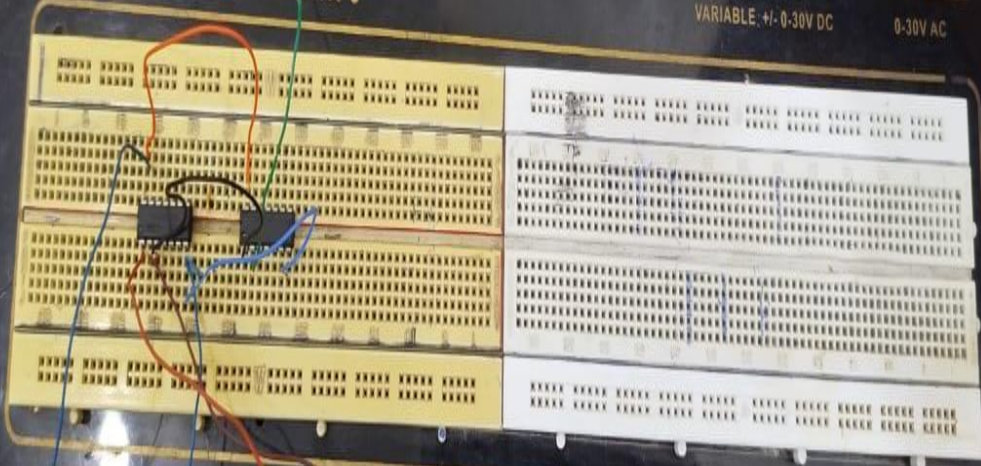


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



LOGIC SWITCHES



PULSER



**Elektronik 2000**

BIGMILLAH MARKET 10-A HALL ROAD LAHORE PAKISTAN  
M 3727104437/246351 email: elektron@brain.net.pk  
Web Site: www.elektron2000.com



POWER



+VE GND -VE  
VARIABLE  $\pm 0-30V$  DC

+VE GND -VE  
FIXED  $\pm 15V$  DC

0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

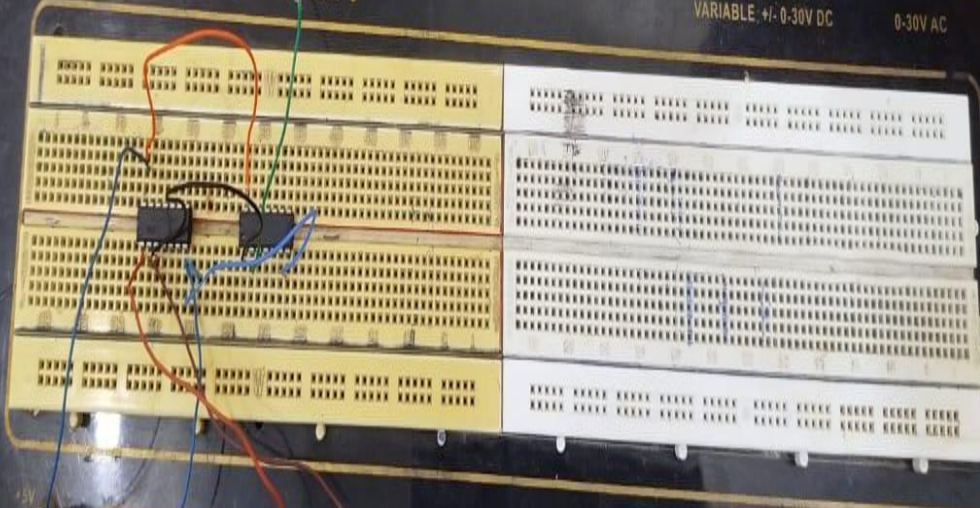


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



LOGIC SWITCHES



PULSER



**Elektronik 2000**

BISMILLAH MARKET 16-A HALL ROAD LAHORE PAKISTAN  
M 37221344/37246351 email: elektronik@brain.net.pk  
Web Site: www.elektronik-2000.com



POWER



+VE GND -VE  
VARIABLE  $\pm 0-30V$  DC

+VE GND -VE  
FIXED  $\pm 15V$  DC

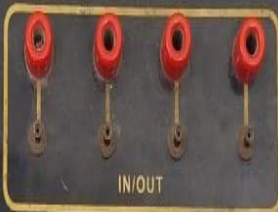
0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

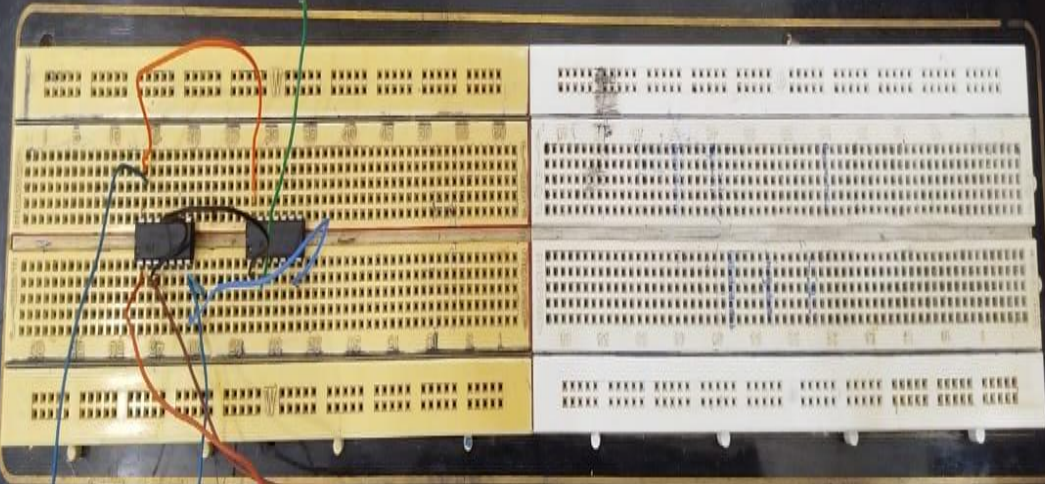


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK

100Hz

1KHz

10KHz

100KHz



LOGIC SWITCHES

+5V

GND



PULSER

1

0

1



**Elektronik 2000**

BIMILLAH MARKET 18-A HALL ROAD LAHORE PAKISTAN  
W 3722 1344317246357 email: elektronik@bimillah.net.pk  
Web Site: www.elektronik-2000.com



POWER



VARIABLE  $\pm 0-30V$  DC



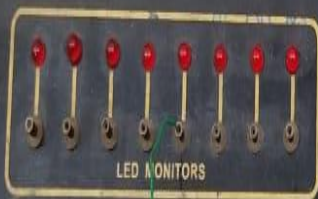
FIXED  $\pm 15V$  DC



0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

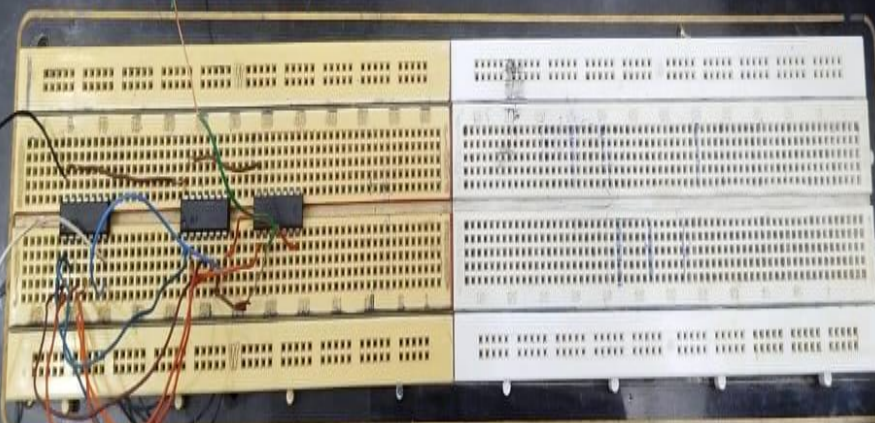


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK

LOGIC SWITCHES

PULSER



+5V

GND







**Elektronik 2000**

BISMILLAH MARKET 10-A HALL ROAD LAHORE PAKISTAN  
W 37221344/37248351 email: elektron@brain.net.pk  
Web Site: www.elektron-2000.com



+VE GND -VE  
VARIABLE  $\pm 0-30V$  DC

+VE GND -VE  
FIXED  $\pm 15V$  DC

0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

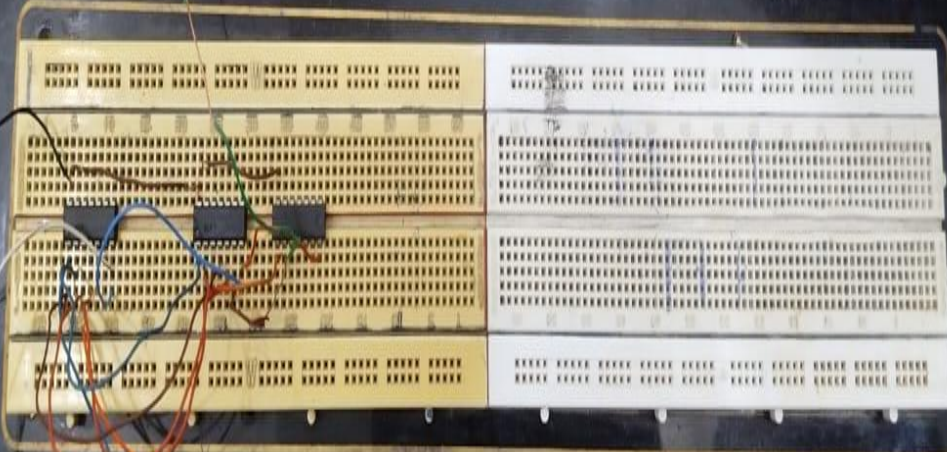


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK



LOGIC SWITCHES



PULSER





**Elektronik 2000**

BISMILLAH MARKET 16-A HALL ROAD LAHORE PAKISTAN  
0372213441/7246331 email: elektronik@brain.net.pk  
Web Site: www.elektronik-2000.com



POWER



+VE GND -VE

VARIABLE  $\pm 0-30V$  DC

+VE GND -VE

FIXED  $\pm 15V$  DC

0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

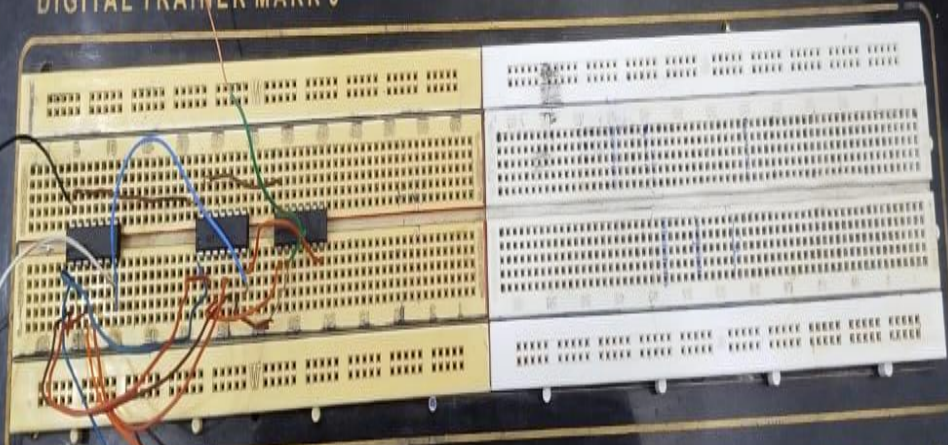


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK

LOGIC SWITCHES



PULSER





**Elektronik 2000**

ISMAILAH MARKET 16-A HALL ROAD LAHORE PAKISTAN  
W 9722154617246331 email: elektronik@brain.net.pk  
Web Site: www.elektronik-2000.com



POWER



+VE GND -VE

VARIABLE  $\pm 0-30V$  DC

+VE GND -VE

FIXED  $\pm 15V$  DC

0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

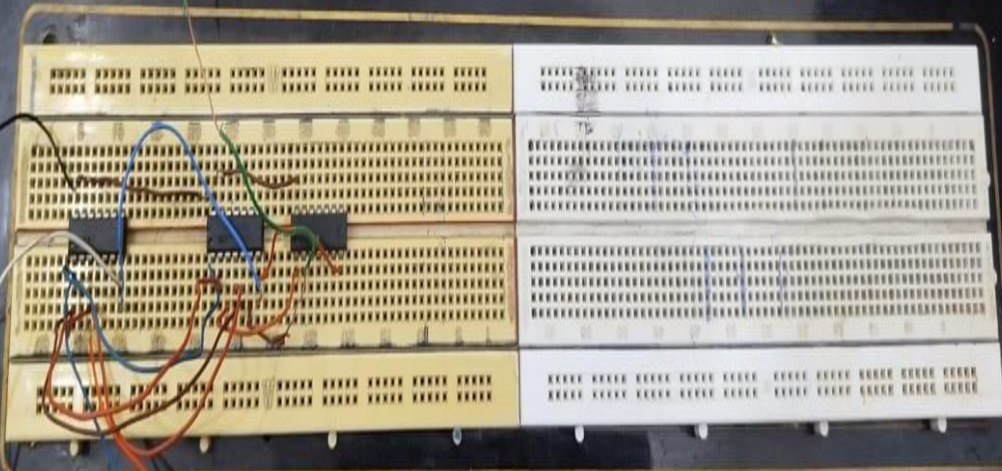


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK



LOGIC SWITCHES

+5V

PULSER









**Elektronik 2000**

105MILLAH MARKET 16-A HALL ROAD LAHORE PAKISTAN  
W 37221344/37246317 email: elektronik@brain.net.pk  
Web Site: www.elektronik2000.com



POWER



VARIABLE  $\pm 0-30V$  DC



FIXED  $\pm 15V$  DC



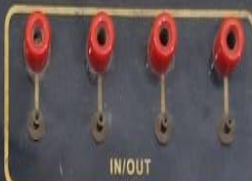
0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE  $\pm 0-30V$  DC

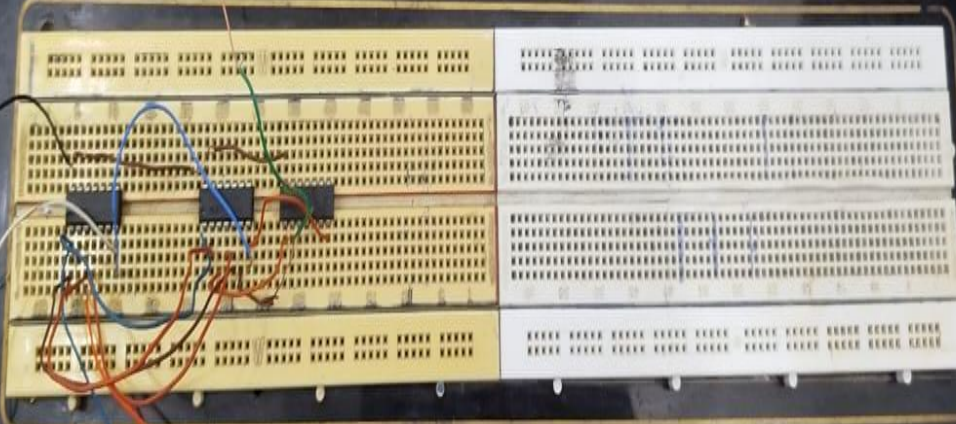


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK



LOGIC SWITCHES



PULSER





**Elektronik 2000**  
BISMIYAH MARKET 10-A HALL ROAD LAHORE PAKISTAN  
M 37271344 072463071 email: info@elektronik2000.com  
Web Site: www.elektronik2000.com



+VE GND -VE  
VARIABLE +/- 0-30V DC

+VE GND -VE  
FIXED +/- 15V DC

0-30V AC



SINE WAVE GENERATOR



LED MONITORS



IN/OUT



VARIABLE +/- 0-30V DC

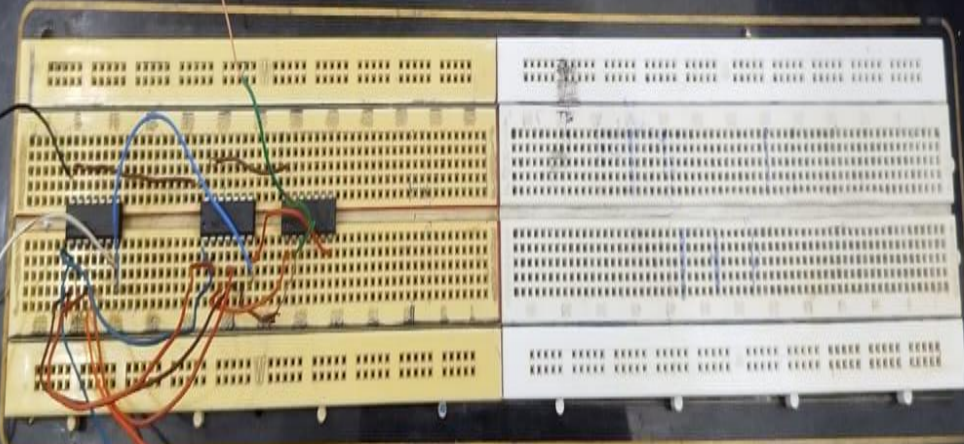


0-30V AC

**DIGITAL TRAINER MARK 5**



TRIANGLE WAVE GENERATOR



CLOCK

100Hz 1KHz 10KHz 100KHz 1Hz



LOGIC SWITCHES

+5V



PULSER

1 10 100