# Classmate Date \_\_\_\_\_

## SA - LAB -3

LAB-3

Formula: 2 JEO (E,h, + Ezhz)/(n (92/51) Serin of mustased read 36 skinmed pulls pourdes 23 \* Measurement of Level Tank using Capacitive Type
Level · Review various Methods of level mesurement.

Understanding working of capacitance level transmilles C = Capacitance in  $\mu F$ rl = radius of inner cylinder / pipe for piper

'pipe in pine' type probe

912 = radius of outer cylinder / pipe for pine in

pipe' type probe

Ro = permittivity of the space = 3.85 × 10-12

91 = permittivity of cir = 1

Go = Dielectric romstant of the process fluid

rotetod selected service. ht = Height (Level) of air Rolumn = span-liquid column height. h2 = Height (Level) of liquid column span = (Tank height \* 0.9)-5

Classmate

Date Page

	Fluind / Service Dielectric
	Water
	under chloric Acid 5
13	Coffee Benns 1.5
	Grain of musiard sala
	skimmed milk pourder 2.3
	Moonwrament of Lord Tank wing Copyrature.
76	priority burn some a priori
ก	
1	91 = 0.1 cm
ā	1 2.5 min Marie Marie Marie
uni	The state of the s
	6, = 1
	$G_{2} = 80$
	hi = 445 - 45 = 1400 matrians = 1
	one = made proce = 19
0	Illera a la seria la policia della della della contra del
	Substituting in formula
	in a manuturity of the Man = 8.85 x 10
	2 T x 8.85 X10-12 (1 X 460 + 80 X 45) - (n (25/0
	and 6.910 x rot20 knotions installing 3 13
	= 0.0691 ME 1000 hot sold hotel
Mic	4-vall = uning sie to (me) tyligiet = 14
	column height:
	he = Height ("Land) of liquid column
	span = (Frank height * 0.9)-5

2] 91 = 0.1cm

Go = 8.85 X10-12

Cu2 = 80

 $h_1 = 445 - 90 = 355$ 

Osurlined on Asso.

h2 = 90

# Substituting in formula

2 TX 8.85 X 10-12 (1 X 355 + 80 X 90) = manalevo (2.5 ÷ 0.1)

Plates (c=alv) changes =

= 0.13 UF

21=0-1cm

22 = 2.5 cm

Co = 8.85 X10-12

G, = Value

Ez = 80

h1 = 445 - 135 = 310

h2 = 135

## , Sublituting in formula

25 x 8.35 x 10-12 (1\*310 + 135 x 80) - (n (2.5 - 0.1)

= 0.19 UF

Liquid

Block Diagram Sensor working

Power

251 \* GO (GI \* hI+&2\*h2)/In (92/h1)

Dielectric

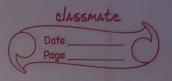
Capatance Probe Function of Supply change change Change don Developed on Plates (c=q/V) O verlapping Area changes

Level

Change in capacitance output is

Sublitation in Lamela

x 12 (1 × 310 + 135 × 80) -



BLOCK Diagram Level to Current Converter

Change Change in Capacitance Bridge

Output V/T Change in Current

Current Converter Voltage