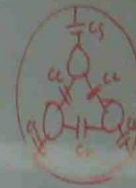


ELECTRICAL DISTRIBUTION PRACTICAL (4)

UNDERGROUND CABLE CAPACITANCE TEST

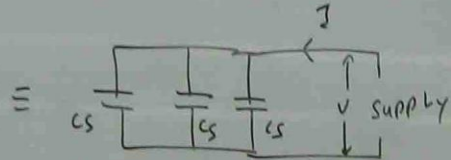
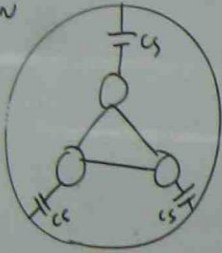
UG CABLE



C_s = CAPACITANCE BETWEEN CONDUCTORS

C_s = CAPACITANCE BETWEEN CONDUCTOR & SHEATH

(1) STUDY THE GIVEN CALCULATION



$$X_{C1} = \frac{V}{I}$$

$$3C_s = \frac{1}{2\pi f X_{C1}}$$

$$C_s = \frac{1}{3 \times 2\pi f X_{C1}}$$

APPLY $V_1 = 80V$, SET RHEOSTAT = 20Ω

MEASURE V_2

$$V = V_1 - V_2$$

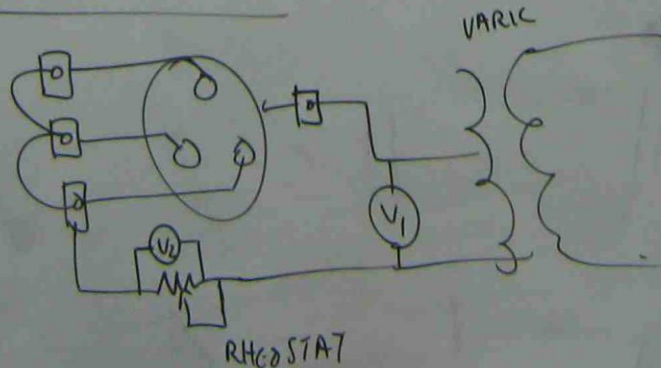
$$I = \frac{V_2}{\text{Rheostat (R)}}$$

$$X_{C1} = \frac{V_1 - V_2}{\frac{V_2}{\text{Rheostat (R)}}}$$

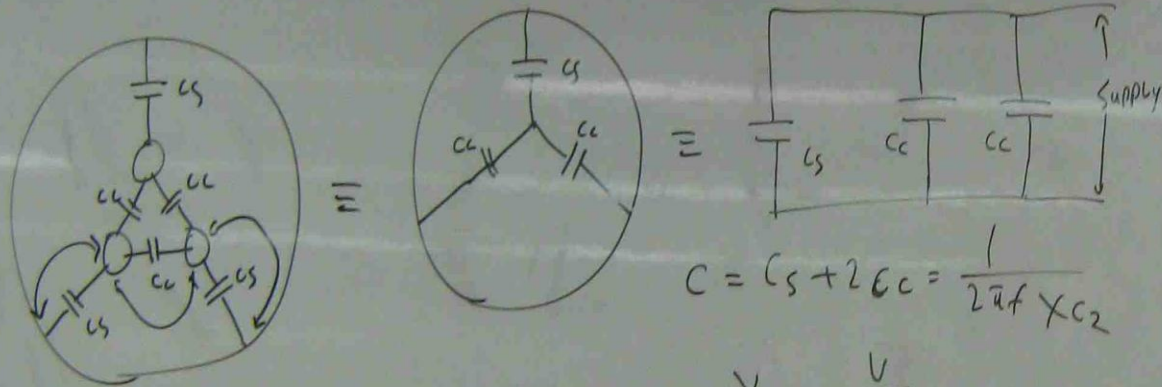
$$C_s = \frac{1}{3 \times 2\pi f X_{C1}}$$

$$= \text{MF}$$

(2) CONNECT THE GIVEN CIRCUIT



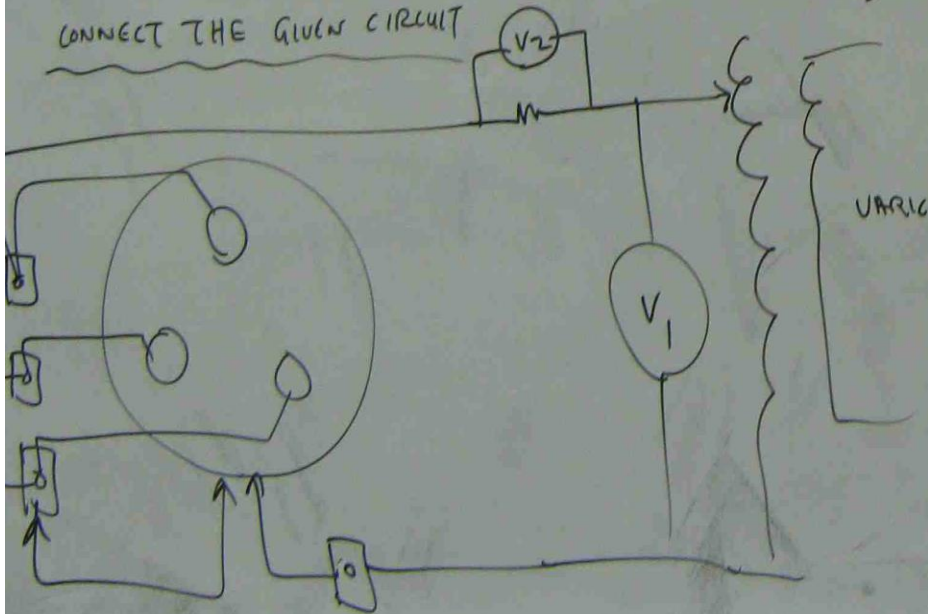
C3) STUDY THE GIVEN CALCULATION



$$C = C_s + 2C_c = \frac{1}{2\pi f X_{C2}}$$

$$X_{C2} = \frac{V}{I}$$

CONNECT THE GIVEN CIRCUIT



SET $V_1 = 80V$

$$X_{C2} = \frac{V_1 - V_2}{I}$$

$$X_{C2} = \frac{V_1 - V_2}{V_2}$$

Rheostat (R)

$$C_s + 2C_c = \frac{1}{2\pi f X_{C2}}$$

THEN CALCULATE C_c

(2) CONNEC

