· Explanation of the diffraction fringes in the illuminated region :→

Let P be a point in the illuminated

Notations

FEBRUARY

Wk 5 6 7 8 9

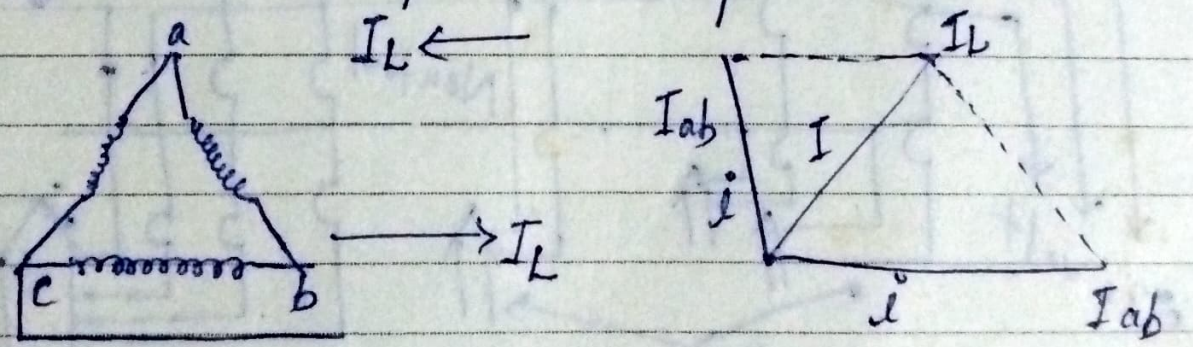
region to find the intensity at P
the wave-front is divided into
half period strips. with respect to
P the pole of the wave-front with
respect to P is O'. with P as
Centre and radi equal to.

$PO' + \frac{\lambda}{2}$, $PO' + \frac{2\lambda}{2}$, $PO' + 3\frac{\lambda}{2}$ ---etc.

The point of wave-front
are marked and then through these
points lines are drawn parallel.

Delta Connection :⟹

In this connection
three windings are Joined in series.
In this connection phase e.m.f and
equal because two coils are connected
in parallel to coil ab and there is
potential difference between a and b
which is phase em.f.



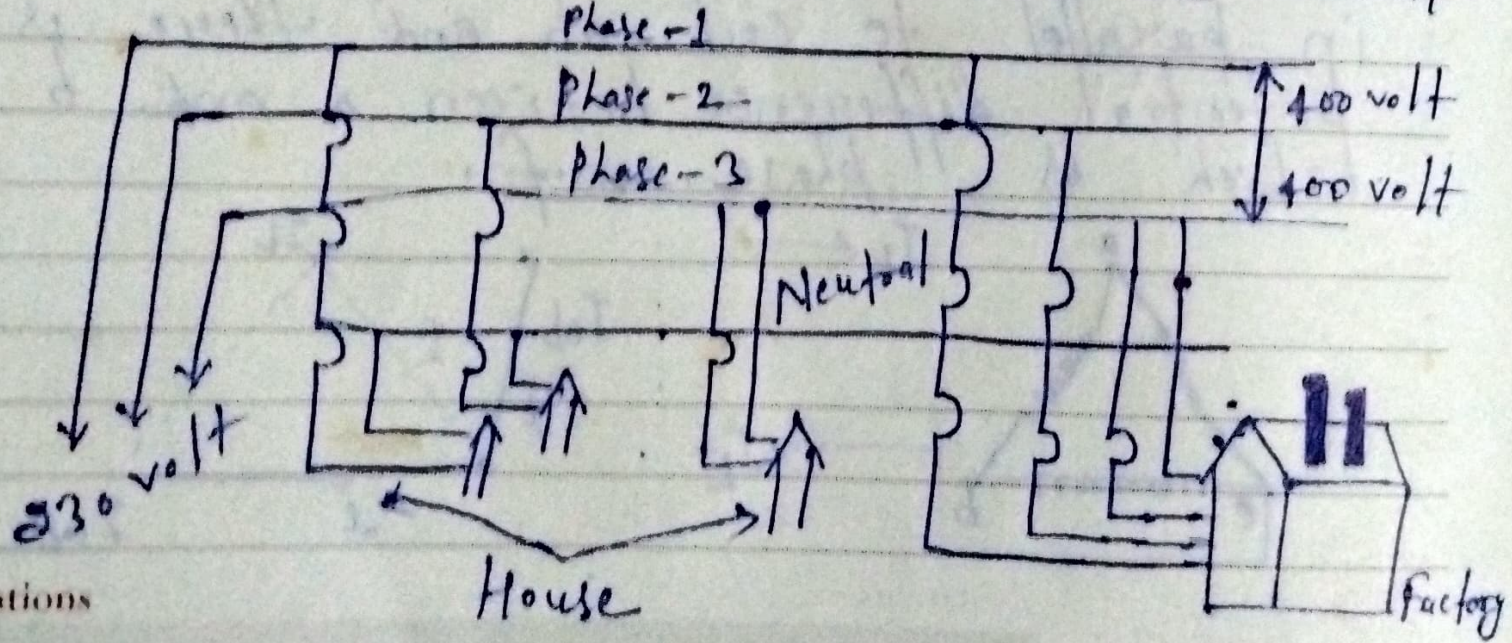
Notations

Since the coils are similare in construction, hence equal current is flowing through the coil, the coil ac and cb are in series and current i is flowing through them. This current is passing through the connecting lines of a and b which is parallel to the current in ab. But the phase aliffeence between the two current is 120°. the lines current is vectore adalition of these two currents if $I_L = I_1$

$$I = \sqrt{i^2 + i^2 - 2i \cdot i \cos 120^\circ} = \sqrt{3i^2} = i\sqrt{3}$$

$$\therefore \frac{I}{I} = \sqrt{3} = 1.732$$

∴ Line current = 1.732 × phase current.



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