Question: A. Explain briefly the problems that arise with magnetization a...

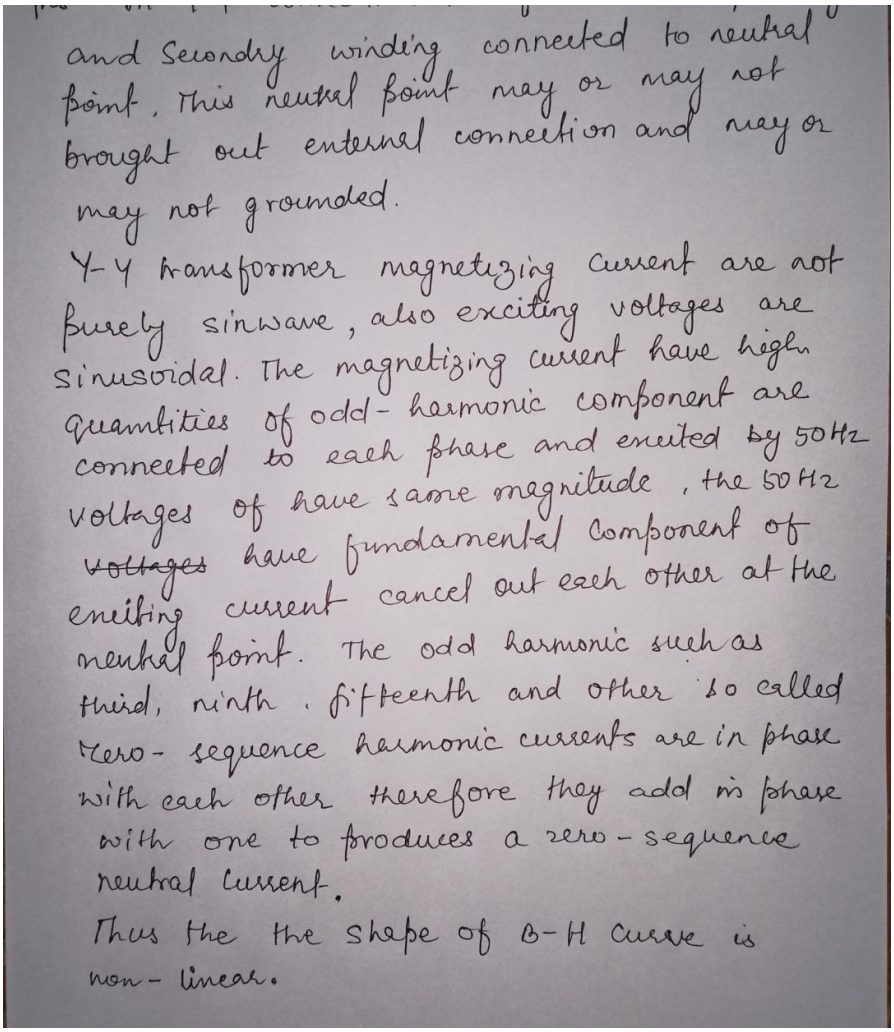
a. Explain briefly the problems that arise with magnetization and unbalanced loading of Yy connected three-phase transformers. Explain why these problems are not present in Yd transformers?

b. Three phase 400/1200V, 25 KVA, Ydl, 50 Hz, core type transformer is subjected to standard open circuit and short circuit tests. Test results are shown below:

Open circuit test: 400 V, 2A, 1 kV (tested on LV side)
Short circuit test: 50 V, 36 A, 1.5 kW (tested on HV side)

i. Draw the equivalent circuit of the transformer referred to HV and LV sides respectively with indicating all the parameters.
ii. Calculate the full load efficiency of the transformer at 0.85 lagging power factor.
iii. Calculate the input voltage when the transformer delivers a balanced three phase load of 15 kW at 1200 V and 0.85 power factor lagging.
iv. What is the current in an LV phase winding under the conditions in (ii) above?
v. Sketch line voltage phasors in the LV and HV sides indicating phase shifts.

Expert Answer


and Secondry winding connected to neutral point. This neutral point may or may not brought out external connection and may or may not grounded.

Y-Y transformer magnetizing current are not purely sinwave, also exciting voltages are sinusoidal. The magnetizing current have high quantities of odd-harmonic component are connected to each phase and excited by 50Hz voltages of have same magnitude, the 50Hz ~~voltages~~ have fundamental component of exciting current cancel out each other at the neutral point. The odd harmonic such as third, ninth, fifteenth and other so called zero-sequence harmonic currents are in phase with each other therefore they add in phase with one to produces a zero-sequence neutral current.

Thus the the shape of B-H curve is non-linear.

hope you understand well and give upvote

And please drop your question one by one

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Questions viewed by other students

Q: (a) List down the software and hardware tools that help develop 8051 based microcontroller systems and state their usage in embedded system designs. (b) List down the different manufacturers that produce 8051 derivatives with their proprietor names with cost. (c) Compare and contrast the followings with the 8051 microcontrollers (choose a microcontroller from each category)...

A: See answer 100% (1 rating)

Q: a) Star connected load having per phase impedance of $75\angle -150\ \Omega$ is supplied by a three phase supply. $VCB = 400\angle 500$ V. Phase sequence is ABC. Determine phase voltages VA,VB, VC and load currents IA, IB,IC b) Three-phase delta connected load having per-phase load of 30+j15 Ω is connected to a supply though conducting wires. Per phase impedance of connecting wire is 2+j...

A: See answer

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