

Moderate

Assistant Engineer (Electrical), Class 2025

Building Department

Two single phase transformers A and B are operating in parallel having different impedance and identical x/r ratio. Then

A

A has poorer pf than B

B

B has poorer pf than B

C

Lesser power factor angle

D

Both operate at same power factor

Correct

Correct Answer: D

Full Detailed Explanation

Concept & Reasoning For transformers in parallel with equal voltage ratios, circulating-current issues aside, load division is inversely proportional to their complex impedances. If Z_A and Z_B have the same X/R ratio, they have the same impedance angle. Multiplying the common load current by complex division changes magnitude according to $|Z|$ but does not introduce a different phase angle between each transformer's current and the common terminal voltage. Hence both transformer currents have the same power factor, although their kVA sharing may be unequal. How to Solve It in the Exam Same X/R ratio same impedance angle same load-current power factor. Important Exam Point Separate load-sharing magnitude from power-factor angle. Related Revision Path This question sits in the revision path Electrical Machines Transformers Parallel Operation .

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