

Easy

Assistant Engineer (Electrical), Class 2025

Building Department

Time constant of an inductive circuit

A

increases with the increase of inductance and the decrease of

Correct

B

increases with the increase of inductance and the increase of

C

increases with the decrease of inductance and the decrease of

D

increases with the decrease of inductance and the increase of

Correct Answer: A

Full Detailed Explanation

Concept & Reasoning After a DC step, current in a simple series RL circuit approaches its final value exponentially with time constant L/R . Roughly 63.2% of the total current change occurs after one time constant and more than 99% after about five time constants. How to Solve It in the Exam L upstairs, R downstairs. Important Exam Point Use the Thevenin resistance seen by the inductor for more general first-order networks. Related Revision Path This question sits in the revision path Signals and Systems → First-Order Circuits → RL Transients.

Open live question on website:

<https://sarkariresultout.com/pyq/question/gpsc-ae-electrical-q186-rl-time-constant/>