

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
ELECTRICAL ENGINEERING DEPARTMENT

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EE-360

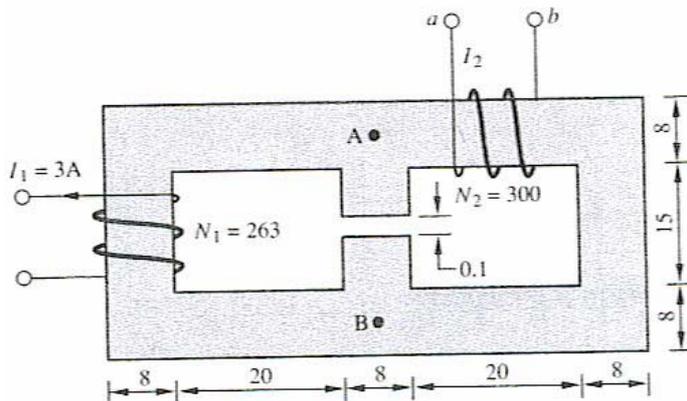
Key Solution

Quiz # 2 Serial #

Name:

I.D.#

The shell core shown below has a uniform cross section area of $5 \times 10^{-4} \text{ m}^2$. If the magnetic flux density produced by I_1 is 5 tesla and the magnetic flux density flowing from point B to A is 10 tesla, the current I_2 is equal to (.....) and flux density flowing in the right leg of the core is (.....).



- a) $I_2 = 2.63 \text{ A}$ entering terminal "a"; $\beta_r = 5 \text{ tesla}$ entering point "A" in the core
- b) $I_2 = 2.63 \text{ A}$ entering terminal "a"; $\beta_r = 5 \text{ tesla}$ entering point "B" in the core**
- c) $I_2 = 7.89 \text{ A}$ entering terminal "b"; $\beta_r = 15 \text{ tesla}$ entering point "A" in the core
- d) $I_2 = 7.89 \text{ A}$ entering terminal "b"; $\beta_r = 15 \text{ tesla}$ entering point "B" in the core