

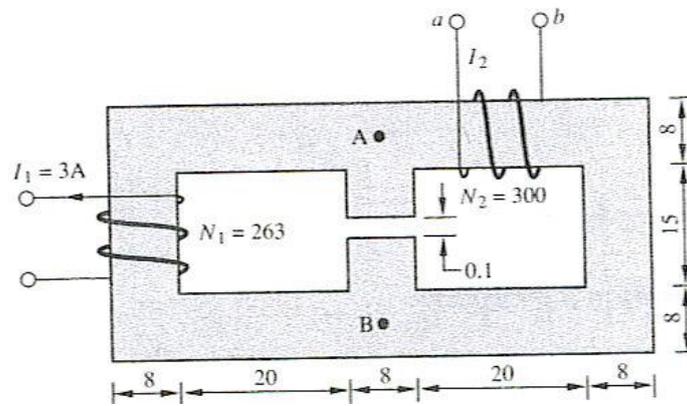
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ELECTRICAL ENGINEERING DEPARTMENT

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EE-306

Key Solution

Quiz 2 Sec.: 8 I.D.: Ser#: Name:

Q.1 The shell core shown below has a uniform cross section area. If the magnetic flux density produced by I_1 is 10 tesla and the magnetic flux density flowing from point B to A is 20 tesla, the current I_2 is equal to (neglect fringing effect and flux leakages): (4-points)



- a) $I_2 = 2.63$ A entering terminal "a"
- b) $I_2 = 2.63$ A entering terminal "b"
- c) $I_2 = 5.26$ A entering terminal "a"
- d) $I_2 = 5.26$ A entering terminal "b"

Q.2 A magnetic circuit has eddy-current loss of 100 W at certain frequency. If the frequency is reduced by 50 % (assuming constant magnetic flux density), the eddy-current loss will be :

- a. 25 W
- b. 50 W
- c. 75 W
- d. 100 W

(4-points)

Q.3 5) The strength of the magnetic flux produced in a rectangular core made of a ferromagnetic material and warped by a coil around one of its leg depends on

- a. The type of the ferromagnetic material.
- b. The shape of the core.
- c. The magnetomotive force of the coil.
- d. All of above.

(2-points)