

**KING FAHD UNIVERSITY OF PETROLEUM & MINERALS**  
**ELECTRICAL ENGINEERING DEPARTMENT**  
**Dr. Ibrahim O. Habiballah**  
**EE-360 (142)**

**Key Solution**

Quiz # 1      Sec.      Serial #      Name:      I.D.#

Circle the correct answer.

1) The ferromagnetic materials that are best suited for making the core of transformers and machines are those which have (...) reluctance and (...) amount of eddy-current flows within the core. (2 Marks)

- a. high, high
- b. low, high
- c. low, low**
- d. high, low

2) The hysteresis loss of a ferromagnetic material core, at rated voltage and frequency, is 40% of its core losses. If the frequency is reduced by 20 % (assuming constant magnetic flux density), the hysteresis loss will be ---- percent of its original core losses. (2 Marks)

- a. 0.08
- b. 0.20
- c. 0.32**
- d. 0.80

3) When a ferromagnetic material is excited from a DC source, and the source is removed, the material will have some (....) (2 Marks)

- a. fringing effect.
- b. flux density.
- c. flux residual.**
- d. flux leakage.

4) Although most of the flux produced by an excited coil in a ring core remains inside the core, there are small amount of the flux that do leave the core and known as (2 Marks)

- a. The fringing effect.
- b. The flux density.
- c. The flux residual.
- d. The flux leakage.**

5) The strength of the magnetic flux produced in a rectangular core made of a ferromagnetic material and wrapped by a coil around one of its leg depends on (2 Marks)

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