Date: _____

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Semister. # 2nd

Cource. # B-Tech Electrical

Instructor. # Engr. Waleed Jan.

Session # 2020

Subject. # D.C machine
And Transformers.

Date:_____

Q1 (A) How Can a machine multiply the effect of human effort? Explain briefly.

Ans.

Machine is a device which reduce human effort or multiply work in less time is called machine.

Example:

1 washing machine

To wash more clothes in less time.

2 Bicycle.

To travel more distance in less time.

3 Data calculator.

To Solve more problems in less time.

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Q1. (B) Why a transformer is Considered as a Static electric machine while motors and generators are Considered as dynamic electrical machine?

Ans.

Transformer is considered as Static electrical machine due to transformation. as input Supply from generating station is high and transformer step down this voltage into 440 v and 220 v. Just step up and step down your Source.

and generators as dynamic machine due is generate electricity its parts moving in its interior. That is why motor and generator are dynamic electrical machine.

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Q2 (a) How Can permiability and relative permiability be differenciated from each other? Explain briefly.

Permiability.

It is the ability of a substance to conduct the magnetic lines is called permiability.

$\mu_0 = 4\pi \times 10^{-7}$ H/m.

Relative Permiability.

The ratio of number of lines per unit area in a given medium to the number of magatic lines per unit area in air" mathematically.

$$\mu_r = \frac{\mu_m}{\mu_{air}} = \frac{\mu_m}{\mu_0} = \frac{\mu}{\mu_0} \quad \text{or} \quad \mu = \mu_0\mu_r$$

R. Permiability of air is 1. Sb is explained below.

As $\mu_r = \frac{\mu_m}{\mu_{air}}$

Hance $\mu_r = \frac{\mu_{air}}{\mu_{air}} = 1$

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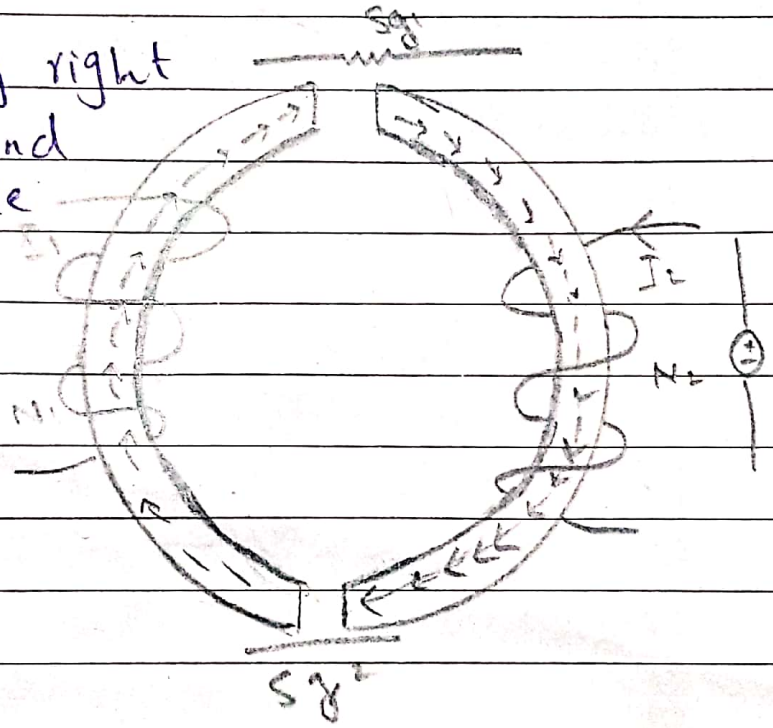
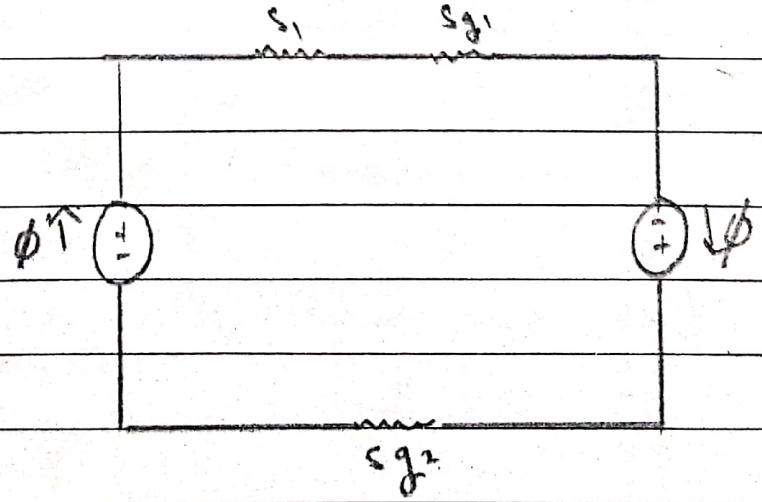
Q2 (B) If we have circular wire. Then explain with the help of Diagram. The direction of Current and magnetic flux for both of the Cases.

By right hand rule





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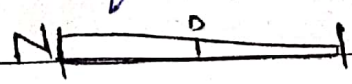
Q3 The force between two poles of a
(A) magnet is inversely proportional to the square of the distance between ~~them~~ the poles. Justify the statement with the help of a law or mathematical Relation.

Coulomb's Law of magnetism.

The fore of attraction between two poles of a magnet is given by Coulumb's Law.

"Suppose we have two poles of a magnet and the pole strength of (N) Pole (M_1) while the pole strength of Spole is (M_2) as shown.



mathematically.

$$f \propto m_1 m_2$$

$$\& \quad f \propto \frac{1}{d^2}$$

$$f \propto \frac{m_1 m_2}{d^2}$$

$$F = \frac{m_1 m_2}{\mu_0 \mu_r d^2}$$

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Q3 When a paterial is placed
(R) near a magnet. it will be attracted towards this magnet. Explain the phenomena which is Responsible For this attraction.

Ans

This phenomina is called magnetic flux. In this phenomena we noted that magnet never be unipole. it always be Dipole. (i.e North and South pole).

The magnet attract materials when it placed near the magnet due to Some force.

This fore is denoted by magnetic lines.

These lines are imagenary and originates from N pole to S pole.