Magnetic properties state that like magnetic poles_____each other, whilst_____poles _____ each other.

(a) repel, unlike, attract.

(b) attract, unlike, repel.

(c) repel, equal, attract.

(d) repel, neutral, attract.

The north pole of a magnet is said to be:

(e) north repelling, repelling the earth's north magnetic pole.
(f) north seeking, seeking the earth's north magnetic pole.
(g) south seeking, seeking the earth's south magnetic pole.
(h) north repelling, seeking the earth's south magnetic pole.

A an example of a material which will have a magnetic field induced into it whilst under the influence of an adjacent magnet is:

(i) copper.
(j) wood.
(k) soft iron.
(l) aluminium.

The opposition of a material to becoming magnetised is known as:

(m) impedance.
(n) reluctance.
(o) resistance.
(p) inductance.

A piece of_____will have a lower amount of residual flux when compared to a piece of _____ when the magnetic influence is removed.

(q) hard steel, soft iron.
(r) soft iron, copper.
(s) hard steel, copper.
(t) soft iron, hard steel.

Magnetic flux is measured in:

(u) Webers.
(v) Teslas.
(aa) Henries.
(bb) Ohm's.

Flux density is a measure of the amount of :

(cc) magnetic flux.

(dd) reluctance per unit area.

(ee) magnetic flux per unit area.

(ff) inductance flux per unit area.

Flux density is measured in:

(gg) Henries.

(hh) Ohm's.

(ii) Webers.

(jj) Teslas.

Retentivity is an indication of how much:

(kk) magnetism is required to magnetise a material.

(ll) residual magnetism a material will have.

(mm) magnetism is required to de-magnetise a material.

(nn) residual magnetism a material will lose.

The flux produced by a magnet is 10mWb. Determine the flux density if the area of the pole is 250 mm^2 (40T)

For the magnet in the previous question, determine the flux density away from the pole if the flux now spreads out to an area of 600 mm^2. (16.7T)

1. If two single current carrying conductors adjacent to each other have currents flowingthrough them in opposite directions, then a/an___force exists between the two coils.

   (a) attraction.

   (b) repulsion.

   (c) magneto motive

   (d) inductive.

2. The magnetic field around a copper conductor can be increased by:

   (a) winding the conductor into a coil.

   (b) increasing the current through the conductor.

   (c) inserting an iron bar into the wound.

   (d) all of the above

3. Two parallel conductors have currents flowing through them in opposite directions.Draw a sectional view of the two conductors, and show the following:

   (a) the relative current directions in each conductor;

   (b) the correct magnetic field around each conductor;

   (c) the resultant magnetic field of the two conductors together;

   (d) the direction of the force exerted between the conductors.

4. A coil of 120 turns has a current of 250mA flowing through it. Determine themagneto motive force produced by the coil. (30At)

5. If the power supply for question 1 has a current limitation of 120mA, how many turnsmust the coil be varied by to maintain the same magneto motive force? (Add 130 turns)

Determine the current that must flow through a coil of 1500 turns to produce a flux of 15mWb. The reluctance of the magnetic circuit is determined to be 5 000At/Wb.

(0.05A)

2. The lagging of changes in magnetic flux density behind changes in magnetising forceis known as:

a) eddy current loss
b) permitivity
c) hysterisis
d) reluctance

3. _____ occurs when the flux density of a material cannot be increased further forincreases in magnetising force.

   a) Residual magnetism
   b) Coercive force
   c) Retentivity
   d) Saturation

1. Fleming's Right Hand rule is used to determine the direction of the:

   (a) magnetic field around a solenoid
   (b) induced currents in a conductor
   (c) magnetic field around a single conductor
   (d) force exerted on a current carrying conductor

2. (0.9T)

3. Determine the velocity of a conductor of 200mm length which is moving at a uniform speed through a magnetic field of 1.25 Tesla flux density at right angles to produce a voltage of:

   (a) 1.5V (6m/s)

   (b) 10V (40m/s)

   (c) 500mV (1m/s)

4. Determine the flux density of a magnetic field if a conductor 25mm long cuts throughthe flux at right angles with a velocity of 15m/s to produce a voltage of 6V. (20T)

5. A coil of 150 turns is lined by a flux of 300mWb. If the flux is reduced to 100mWb in100mS, determine the voltage induced in the coil. (300V)

1. The deflecting torque in an analogue meter is produced by.

   (a) springs

   (b) Lenz's law

   (c) the coil current

   (d) an air dashpot

2.

3. A moving iron meter movement requires 3200 ampere turns to indicate full scale deflection. If the meter is to be used as a 5 ampere AC ammeter how many turns arerequired on the current coil? (640 turns)

4. An ammeter scaled 0 to 150mA is used with the appropriate shunt to measure a full scale current of 25 amperes. If the scale reading is 96 milliamperes what is the currentflowing in the circuit?(16A)