Questions from the same exercise can be combined together to increase difficulty.

2.4

A conductor 2m long moves at a speed of 60km/h through a magnetic field having a flux density of 0.6T. What is the induced voltage?

a) 72V.

b) 72000V.

c) 20V.

d) 1200V.

2.5

A coil having 200 turns links a flux of 3mWb, produced by a permanent magnet. The magnet is moved, and the flux linking the coil falls to 1.2mWb in 0.2s. What is the average voltage induced?

a) 1800V.

b) 1.8V.

c) 3V.

d) 1.2V.

## 2.6

What are the SI units of Magnetic flux, Magnetic flux density, Magnetic field intensity and Magnetomotive force?

a) Weber (Wb), Tesla (T), Ampere/meter (A/m) and Ampere-turn ([A]) respectively.

b) Tesla (T), Weber (Wb), Ampere/meter (A/m) and Ampere-turn ([A]) respectively.

c) Weber (Wb), Ampere/meter (A/m), Tesla (T) and Ampere-turn ([A]) respectively.

d) Ampere-turn ([A]), Tesla (T), Ampere/meter (A/m) and Weber (Wb) respectively.

2.7

What is the relative permeability of cast iron at 0.2T, 0.6T and 0.7T, referring to the following figure?
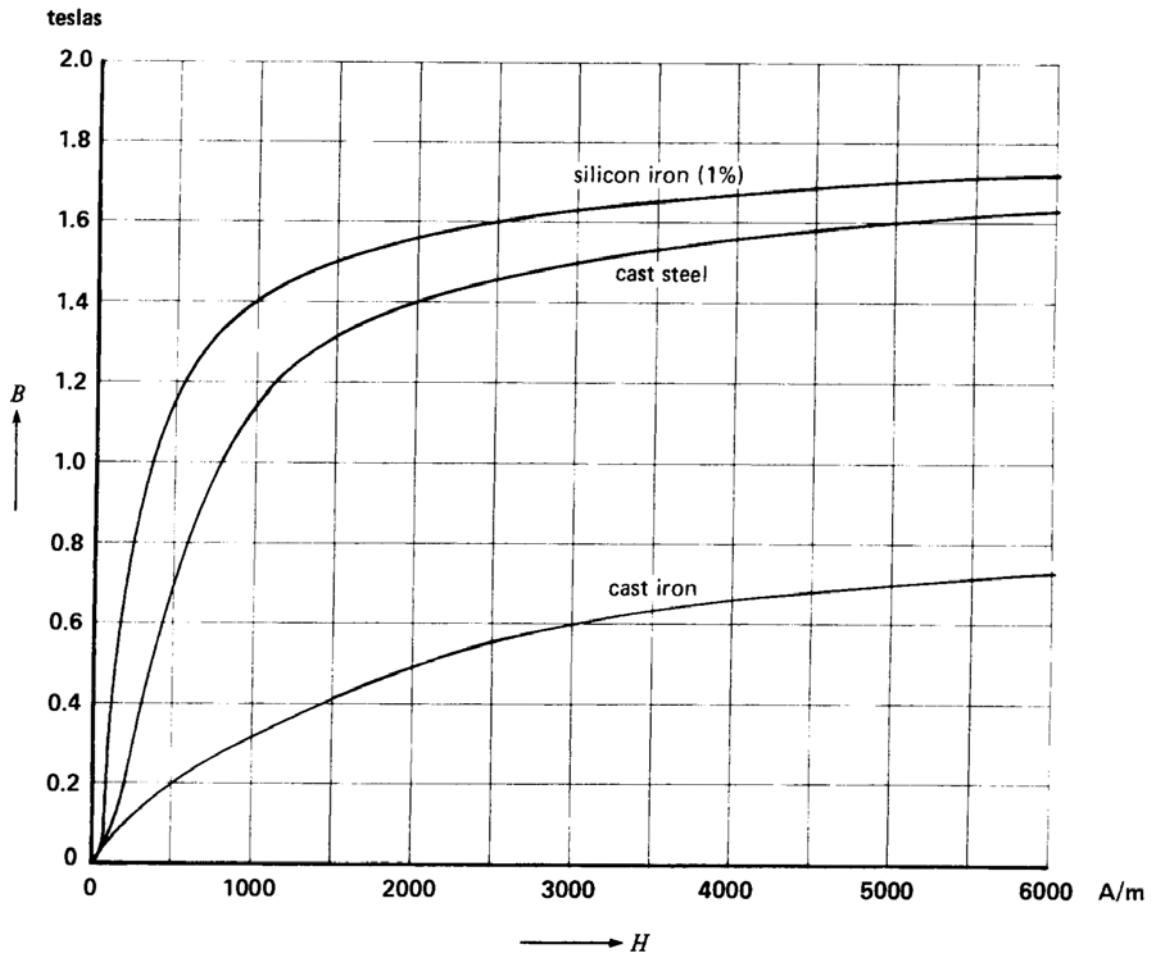
a) 500 A/m, 3000 A/m, 5000 A/m respectively.

b) 320, 160, 112 respectively.

c) 0.0004 H/m, 0.0002 H/m, 0.00014 H/m respectively.

d) None of the above.

2.9 (force)
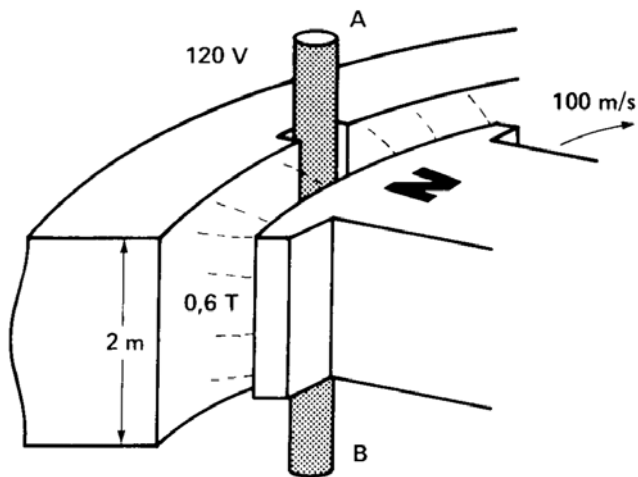
Conductor AB in the figure below carries a current of 800A flowing from B to A. What is the force on the conductor?
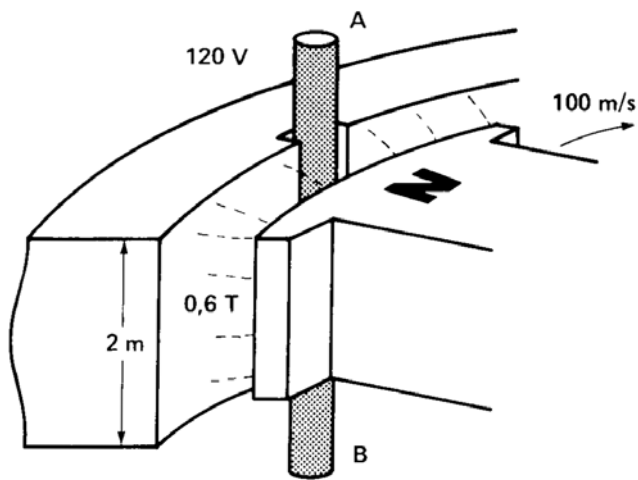
a) 120N.

b) 300N.

c) 500N

d) None of the above (960N).

2.9 (force on the moving pole) DIFFICULT (action - reaction)

Conductor AB in the figure below carries a current of 800A flowing from B to A. What is the force on the conductor?

a) 960N.

b) 300N.

c) 500N

d) None of the above.

2.10

A sinusoidal voltage source has a peak value of 200V and a frequency of 5Hz. If the voltage at t=0 is zero, what is the voltage at t=5ms?

a) 5V

b) 200V.

c) 0.55V.

d) 31.3V.

2.12 (current)

A sinusoidal voltage of 170V peak is applied to a resistor of 10Ω. What is the effective current in the resistor?

a) 17A.

b) 24A.

c) 12A.

d) None of the above.

2.12 (power)

A sinusoidal voltage of 170V peak is applied to a resistor of 10Ω. What is the power dissipated in the resistor?

a) 2890W.

b) 4080W.

c) 1445W.

d) None of the above.

2.12 (peak power)

A sinusoidal voltage of 170V peak is applied to a resistor of 10Ω. What is the peak power dissipated in the resistor?
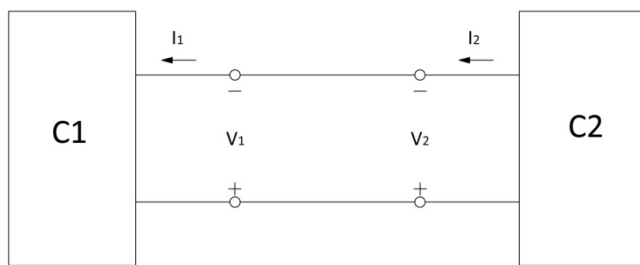
a) 2890W.

b) 4080W.

c) 1440W.

d) 2890W.

2.14

The current in a 60Hz single-phase motor lags 36 degrees the voltage. What is the time interval between the positive peaks of voltage and current?

a) 1.67ms.
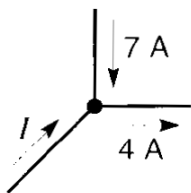
b) 36ms.

c) 6ms.

d) None of the above.

(mine)

For the figure below, taking the source-load convention into consideration, which one of the following is true?

a) Component C1 acts as source.

b) Component C2 acts as source.

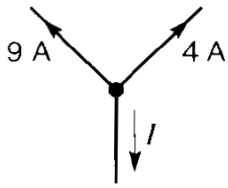c) Both components are sources.

d) None of the above.

2.22 (1)

What is the current I in the following figure?
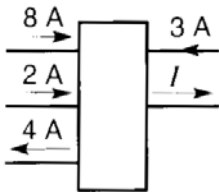

a) 3A.

b) 11A.

c) -11A.

d) -3A.

2.22 (2)

What is the current I in the following figure?

a) -13A.

b) 13A.

c) 5A.

d) -5A.

2.22 (3)

What is the current I in the following figure?

a)-9A.

b) 9A.

c) 13A.

d) -5A.