

Solutions

2.1 B Changing field strength, coil area, orientation or relative motion can change flux linkage. Lenz law describes an induced effect opposing the change producing it, consistent with energy conservation.

2.2 $V_s = V_p \ N_s/N_p = 20 \times 100/400 = 5 \text{ V}$.

2.3 False. A transformer needs changing magnetic flux; a steady DC input does not provide continuous transformer action. Magnetic field direction is not automatically the direction of force.

2.4 induction. induction means Creation of emf by changing flux linkage.

3.1 Power is 6 W; secondary current is $6/5 = 1.2 \text{ A}$. Ideal power conservation exchanges voltage and current. Induction requires changing flux, absent in the steady DC state.