

1. A circular coil of wire of radius 5.2 cm lies in the plane of the page. The resistance of the coil is 0.21Ω . Pointing out of the page is a magnetic field that is perpendicular to the plane of the loop and uniformly covers the entire area enclosed by the loop. The magnetic field is changing according to $B(t) = 4.5t^2 + 3.2t$, where B is in milliTesla when t is in seconds. At a time of 1.5 s, what are (a) the emf induced in the loop; (b) the current (magnitude and direction) in the loop, and (c) the magnitude and direction of the non-Coulombic electric field in the loop.

Answer: (a) 0.14 mV

2. 22.P.28 Two concentric metal rings

Answer: (b) 0.78 nA