

Announcements

- Exam will be released by this evening. Look for an email with information.
- Unit 2 Homework and Objectives available on the Handouts page
- Wolfson (vol. 1) Chapter 14 for Thursday's class is available on the Handouts page
- MCAT Physics session here in Olin 268 next Tuesday, Feb. 25, from 8:00-9:00 pm

Physics & Astronomy Seminar

Chromatin remodeling: a view through electromagnetic lenses



Jean Paul Armache

Biochemistry and Molecular Biology
Penn State University

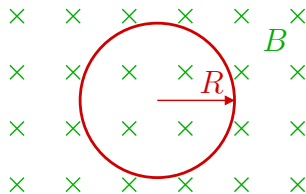
Olin 268. Thursday, Feb. 20 at 12:00

Pizza provided. Bring your own water bottle.

Lecture 8 — Concept Test 1

A loop of wire is in a magnetic field, as shown in the diagram. For each of these cases, is there an induced emf and an induced current in the loop?

Answer: **1.** yes, **2.** no

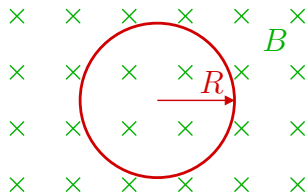


- (a) The magnetic field is strong and constant (not varying).
- (b) The magnetic field is decreasing in strength.
- (c) The field is constant and the coil is somehow shrinking.
- (d) The field is constant and the coil is rotating about a vertical axis.
- (e) The field is constant and the coil rotates about an axis through its center perpendicular to the screen.

Lecture 8 — Concept Test 2

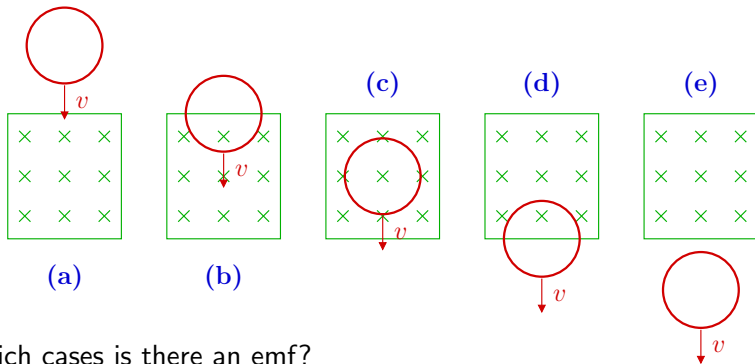
A loop of wire is in a magnetic field, as shown in the diagram. For each of these cases, what is the direction of the induced current in the loop?

Answer: **1.** cw, **2.** ccw



- (a) The magnetic field is decreasing in strength.
- (b) The magnetic field is increasing in strength.
- (c) The field is constant and the coil is somehow shrinking.
- (d) The field is constant and the coil is rotating about a vertical axis.

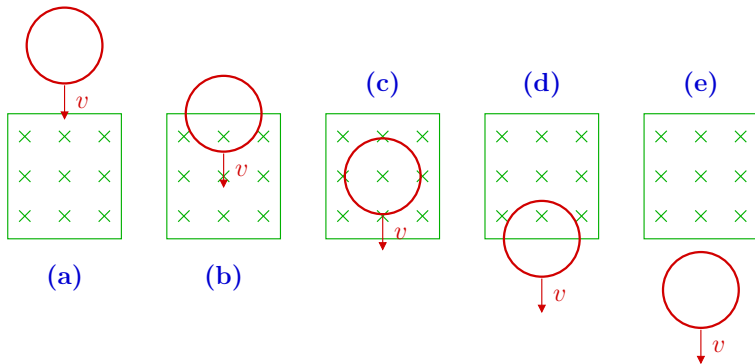
Lecture 8 — Concept Test 3



In which cases is there an emf?

1. a & e
2. b & d
3. c only
4. b, c, & d
5. All of the cases shown
6. None of the cases shown

Lecture 8 — Concept Test 4

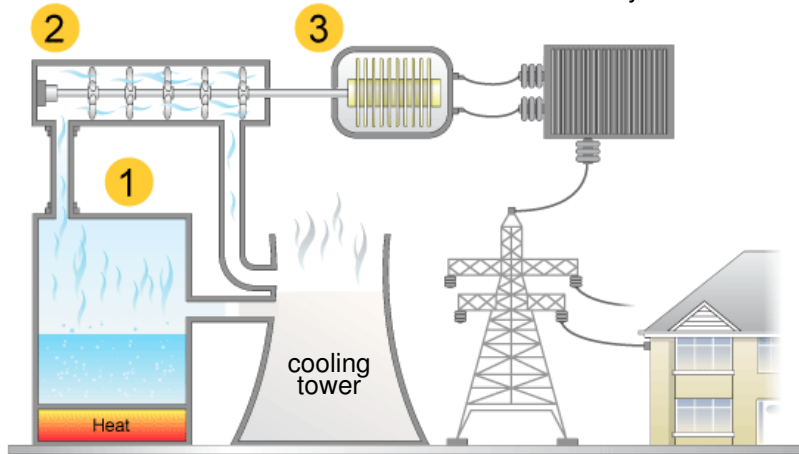


What is the direction of the induced current for cases (b) and (d)?

1. CCW for both
2. CW for both
3. (b) CW, (d) CCW
4. (b) CCW, (d) CW
5. Not enough info
6. Too much info

2. Turbines: steam rushing through causes them to turn

3. Generator: rotating shaft converted to electricity



1. Heat source: boils water.
(burning coal or nuclear)

Cooling tower: dumps heat into atmosphere,
condenses steam back to water.

Lecture 8 — Concept Test 5

What is the direction of the induced eddy current in the plate as the plate enters the region with the magnetic field?

1. Clockwise
2. Counterclockwise
3. There is no current induced in the plate

