

| class2016 | | | | |
|-----------|-------|-------|-------|-------|
| R | Exam1 | Exam2 | Exam3 | Exam4 |
| R00801609 | 68 | 68 | 100 | 68 |
| R01026470 | 84 | 68 | 100 | 84 |
| R01077393 | 84 | 84 | 84 | 84 |
| R01078460 | 100 | 68 | 84 | 68 |
| R01083245 | 100 | 84 | 100 | 84 |
| R01096647 | 84 | 52 | 100 | 84 |
| R01124126 | 84 | 52 | 92 | 52 |
| R01124355 | 84 | 68 | 100 | 84 |
| R01173254 | 100 | 52 | 100 | 68 |
| R01177331 | 100 | 36 | 100 | 68 |
| R01305105 | 100 | 36 | 100 | 84 |
| R01316004 | 100 | 68 | 100 | 68 |
| R01316415 | 68 | 54 | 84 | 68 |
| R01320803 | 84 | 52 | 100 | 52 |
| R01323060 | 100 | 52 | 100 | 68 |
| R01324215 | 100 | 52 | 100 | 68 |
| R01327763 | 84 | 68 | 100 | 52 |
| R01328521 | 84 | 52 | 100 | 52 |
| R01329410 | 52 | 52 | 68 | 68 |
| R01329827 | 100 | 20 | 100 | 68 |
| R01331415 | 100 | 36 | 100 | 68 |
| R01331479 | 84 | 36 | 92 | 84 |
| R01335317 | 100 | 20 | 100 | 84 |
| R01336246 | 100 | 52 | 100 | 84 |
| R01336332 | 100 | 52 | 100 | 84 |
| R01337940 | 68 | 52 | 92 | 68 |
| R01338810 | 68 | 52 | 84 | 84 |
| R01342892 | 100 | 68 | 84 | 68 |
| R01344623 | 84 | 52 | 92 | 84 |
| R01347660 | 100 | 68 | 100 | 84 |
| R01347712 | 100 | 68 | 100 | 84 |
| R01351700 | 100 | 84 | 100 | 68 |
| R01368974 | 68 | 84 | 100 | 34 |
| R01369514 | 100 | 68 | 100 | 52 |
| R01371352 | 84 | 68 | 84 | 84 |
| R01393833 | 100 | 52 | 100 | 68 |
| R01394566 | 100 | 68 | 100 | 68 |

Summer 2016. Exam 4. QQ 1-3

- #1. A magnetic dipole moment μ , originally in the plane of a rectangular conducting loop is rotated clockwise to become perpendicular to that plane (vector μ , pointing upward). The current in the rectangle is:

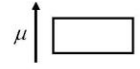
A. zero
 B. clockwise
C. counterclockwise
 D. clockwise in the left side and counterclockwise in the right side
 E. None of the above

#2. A resistor R and an inductor L form a closed loop. At time $t = 0$ the current is zero. A magnetic flux through the loop is changing uniformly from Φ to 0 during time Δt . As a result, the current through the resistor reaches the absolute value $\Phi/R\Delta t$. Which of the following statements is correct:

A. $(\Delta I)R > L$
 B. $(\Delta I)R < L$
 C. $(\Delta I)R = L$
 D. $(\Delta I)L > R$
 E. None of the above

#3. Radio receivers are usually tuned by adjusting the capacitor of an LC circuit. If $C = 1 \mu\text{F}$ for a frequency of 600 kHz, then for a frequency of 600 GHz, one must adjust C to:

A. $C/2$
B. $10^{11}C$
 C. $10^{-11}C$
 D. It is practically impossible
 E. All of the above



Summer 2016. Exam 4. QQ 4-6

- #4. A coil has a reactance of 80Ω and an impedance of 100Ω . Its resistance, in ohms, is:

A. 40
B. 60
 C. 80
 D. 117
 E. 160

#5. A charged capacitor and an inductor are connected at time $t=0$. After 17.25 periods of the resulting oscillations, which of the following quantities reaches its maximum?

A. Magnetic flux through the inductor
 B. The emf of the inductor
 C. Electric energy
 D. None of the above

#6. An oscillating LC circuit with a 20 mH superconducting inductor has angular frequency 3000 s^{-1} . What is the ratio of the maximum voltage on the capacitor over maximum current in the inductor?

A. 120 A
 B. 120Ω
C. 60 Ω
 D. 120 F
 E. Impossible to evaluate
 F. None of the above