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# GOLDEN SAMPLE QUESTIONS

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## PHYSICS For CBSE 2019 (Set 1)

### (Q1) One Mark

1. How much positive and negative charge is there in a cup of water?

### (Q2) Two Marks

2. If two objects repel one another, you know both carry either positive charge or negative charge. How would you determine whether these charges are positive or negative?

### (Q3 & 4) Three Marks

3. Find the current flowing through a copper wire of length 0.2 m, area of cross-section  $1 \text{ mm}^2$ , when connected to a battery of 4 V. Given that electron mobility =  $4.5 \times 10^{-6} \text{ m}^2 \text{ V}^{-1} \text{ s}^{-1}$  and charge on electron =  $1.6 \times 10^{-19} \text{ C}$ . The number density of electron in copper is  $8.5 \times 10^{28} \text{ m}^{-3}$ .

4. Define motion of a charged particle in a uniform magnetic field.

### (Q5) Five Marks

5.

(a) Show that the rate of change of magnetic flux has the same units as induced e.m.f? **(2 Marks)**

(b) A circular brass loop of radius  $a$  and resistance  $R$  is placed with its plane perpendicular to a magnetic field, which varies with time as  $B = B_0 \sin \omega t$ . Obtain the expression for the induced current in the loop.

**(3 Marks)**



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