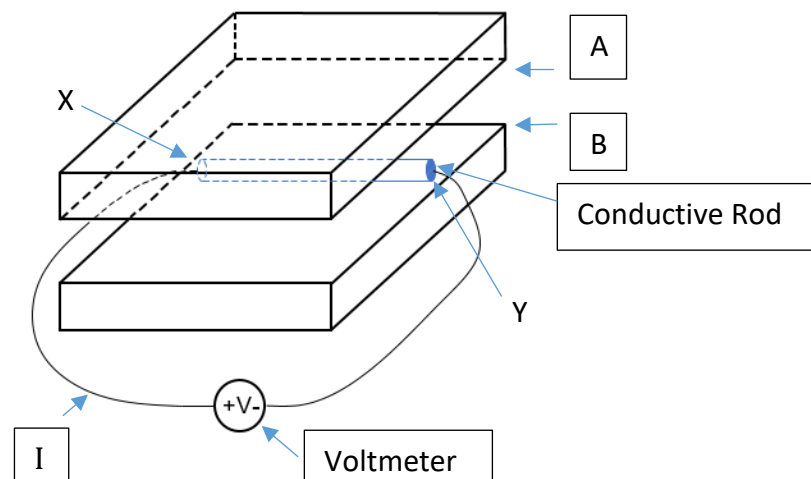


**Tutorial 7b**



This diagram is for answering Q1 to Q5.

- Q1 Given that A is a North pole and B, a South pole, what is the direction of the current, if any, when the rod is moved at a velocity towards the reader?

The current flows from left to right/ right to left / no current at the point marked by I.

- Q2 Given that A is a North pole and B, a South pole, what is the direction of the voltage when the rod is moved at a velocity towards the reader?

The end marked X is negative/positive with respect to the end marked Y.

- Q3 Given that A is a South pole and B, a North pole, what is the direction of the voltage when the rod is moved at a velocity towards the reader?

The end marked X is negative/positive with respect to the end marked Y.

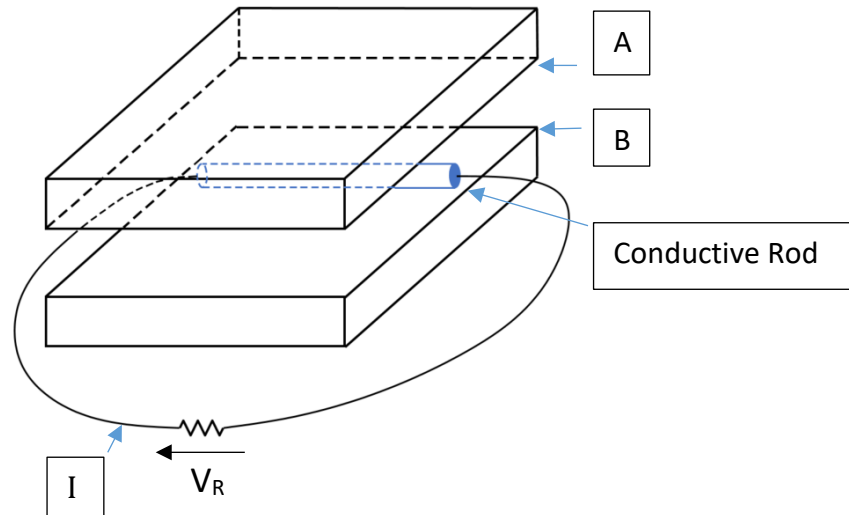
- Q4 Given that A is a North pole and B, a South pole, what is the direction of the Lorentz force generated that acts on the rod, if any, when the rod is moved at a velocity towards the reader?

The rod experiences a force

into the paper/ towards the reader/ upwards/ downward/ no force

- Q5 Given that A is a North pole and B, a South pole, and the voltmeter register - 3 V. In which direction is the rod moving?

The rod is moving into the paper/ towards the reader/ upwards/ downwards.



This diagram is for answering Q6 to Q10

- Q6 Given that A is a North pole and B, a South pole, what is the direction of the current, if any, when the rod is moved at a velocity into the paper?

The current flows from left to right/ right to left / no current at the point marked by I.

- Q7 Given that A is a North pole and B, a South pole, what is the polarity of  $V_R$  when the rod is moved at a velocity into the paper?

$V_R$  is is negative/positive.

- Q8 Given that A is a South pole and B a North pole, what is the polarity of  $V_R$  when the rod is moved at a velocity into the paper?

$V_R$  is is negative/positive.

- Q9 Given that A is a North pole and B, a South pole, what is the direction of the Lorentz force generated that acts on the rod, if any, when the rod is moved at a velocity into the paper?

The rod experiences a force

into the paper/ towards the reader/ upwards/ downward/ no force

- Q10 A downward pointing uniform magnetic field of 0.2 Tesla is created by the magnetic poles A and B and the rod is 0.1 m long. Determine the direction and the magnitude of the force on the rod when the current is 10 A flowing from left to right at point marked by I.