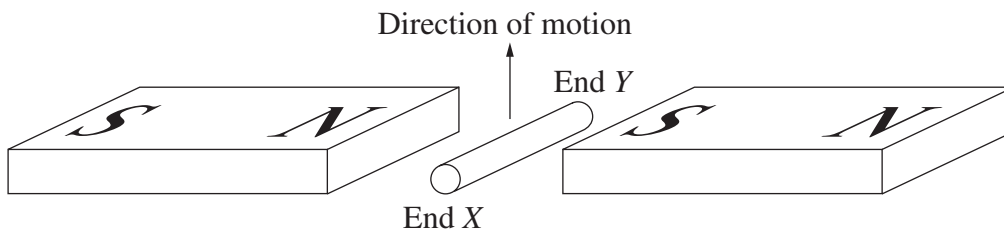


**Question 23** (7 marks)

- (a) State Lenz's law. **1**

.....  
 .....

- (b) When the metal rod is moved upwards through the magnetic field as shown in the diagram, an emf is induced between the two ends.



- (i) Which end of the rod is negative? **1**

.....

- (ii) Explain how the emf is produced in the rod. **3**

.....  
 .....  
 .....  
 .....  
 .....  
 .....

- (c) Explain how the principle of induction can be used to heat a conductor. **2**

.....  
 .....  
 .....  
 .....