

- (b) To monitor the speed of flow of the liquid metal, a similar arrangement of electrodes and magnetic field is set up further down the tube. See Fig. 5.2. A voltmeter is connected across the electrodes instead of a power supply.

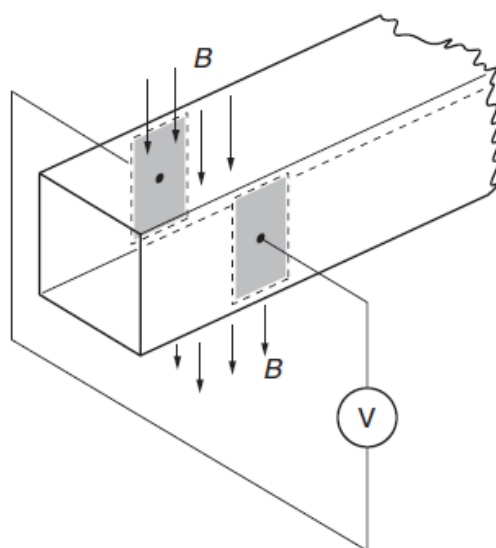


Fig. 5.2

- (i) Explain, using the law of electromagnetic induction, why the voltmeter will register a reading which is proportional to the mean speed of flow of the metal.

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- (ii) State how and explain why the voltmeter reading changes when the magnetic flux density across the tube is doubled.

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[Total: 10]