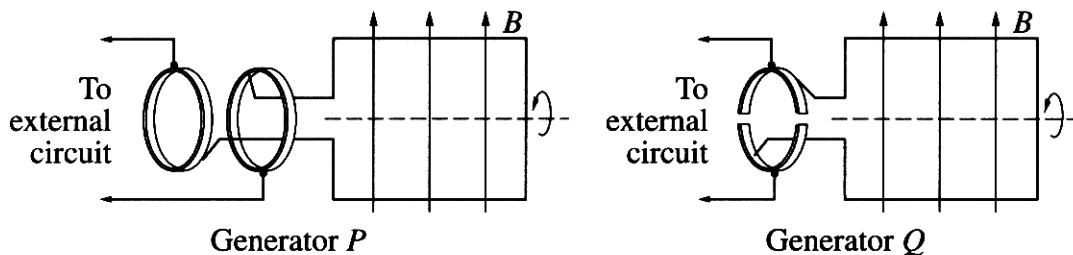


Section I – Part B (continued)

Marks

Question 22 (6 marks)

Two types of generator are shown in the diagram.

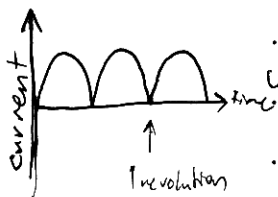


(a) What is the function of the brush in a generator? 1

The brush ~~for~~ allows current to flow to the external circuit, while still allowing the coil to ~~be~~ rotate.

(b) Which of these generators is a DC generator? Justify your choice. 3

Generator Q is a DC generator because it contains a split ring commutator. This means that when revolving the current changes direction every half turn, so that the output current is always positive (see diagram).



(c) Outline why AC generators are used in large-scale electrical power production. 2

AC generators are used in large-scale power production because AC electricity can be easily stepped up and down in voltage through the use of transformers. This means that electricity can be transmitted with lower current meaning less energy losses in power lines. ~~AC~~ Industrial AC generators also do not contain a commutator and so do not have as many parts which can wear out, making them more reliable.

- can be stepped up or down
- no commutator \Rightarrow more reliable