

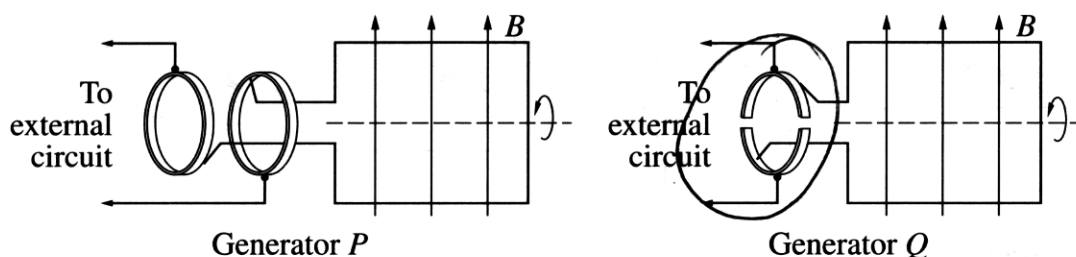
Physics

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

To let the induced emf leave the generator with minimised friction. (energy loss)

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

Generator Q is the DC generator. It features the split rings of a commutator to change the alternating current into a direct current. AC generators need AC current and thus do not utilise the split ring commutator.

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

AC generators produce AC current which is suitable for the use in transformers. Transformers enable voltage to be stepped up during transmission to reduce energy loss in the form of heat as the result of added current.
 $(P = VI)$ & $(E = VIT)$