7 Fig. 7.1 shows a simple a.c. generator.

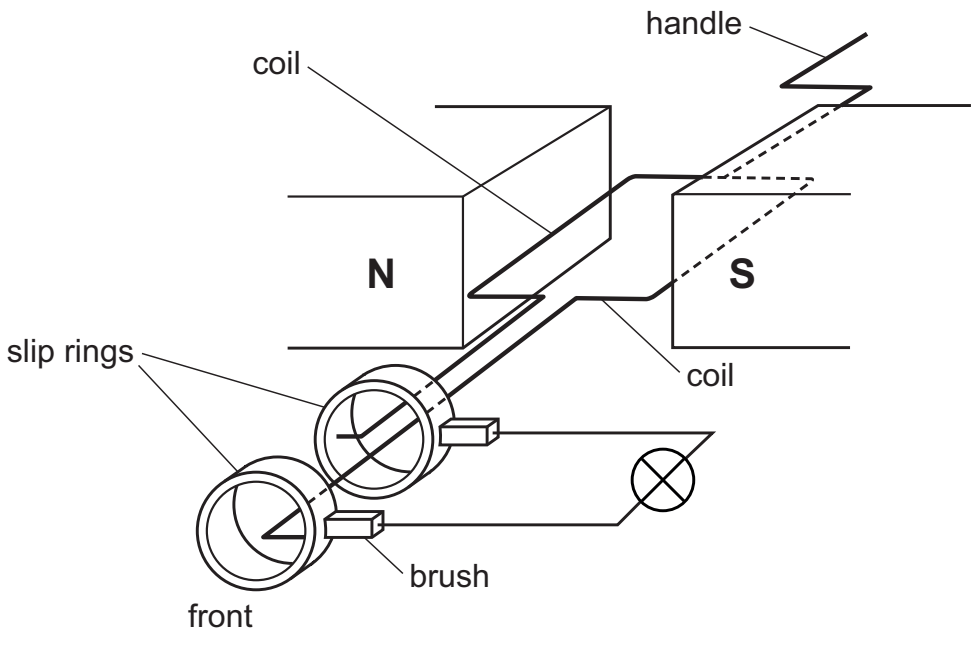

Fig. 7.1

(a) (i) Explain the function of the slip rings and brushes.

.....

.....

..... [1]

(ii) Describe how an alternating current is generated in the lamp.

.....

.....

.....

.....

.....

.....

..... [3]

(iii) State **two** possible changes that cause a larger maximum current in the lamp.

1 .....

2 .....

[2]

(b) Fig. 7.2 is a graph to show how the electromotive force (e.m.f.) varies with time for the coil.

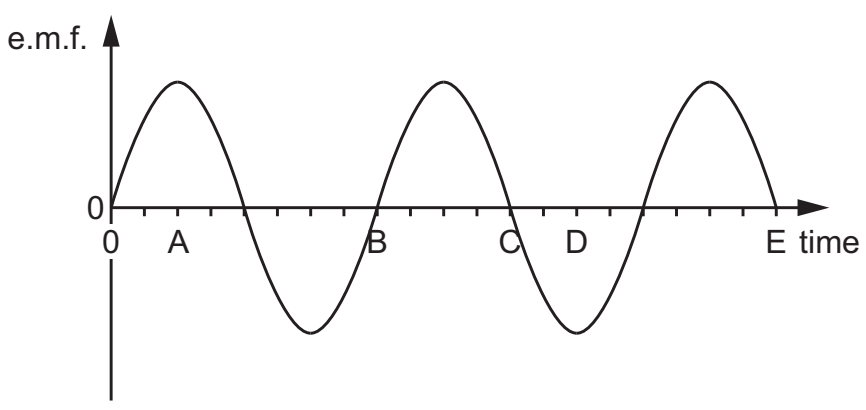

Fig. 7.2

(i) Determine how many revolutions the coil has made, from time = 0 to E.

number of revolutions = ... [1]

(ii) Fig. 7.3 shows the end view of the position of the plane of the coil at time = 0. The coil is rotating anti-clockwise.

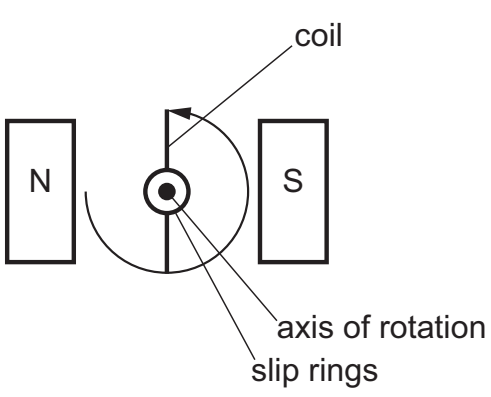

Fig. 7.3

On Fig. 7.4, draw **four** lines to match the coil position to the times A, B, C and D. The coil is viewed from the front.

Each coil position may be used once, more than once or not at all.

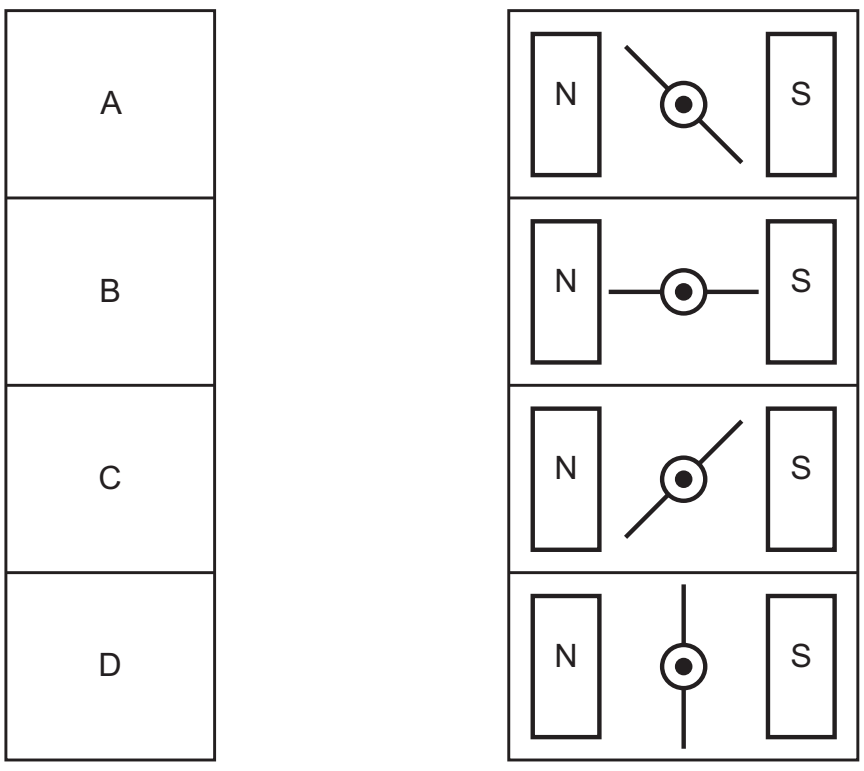

Fig. 7.4

[3]

[Total: 10]