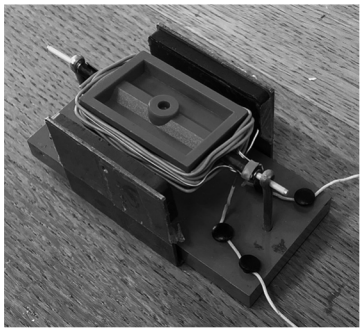
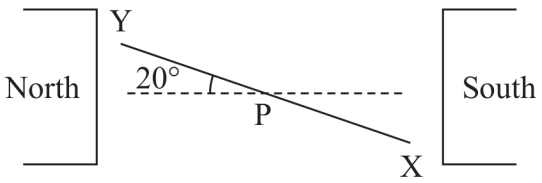
SECTION B

Answer ALL questions.

11 The photograph shows a model electric motor.





A coil of wire is mounted between two magnets. When there is a current in the coil, it rotates.

The diagram shows the position of the coil, viewed from one end, when it is at an angle of 20° to the horizontal. The current is into the page at X and out of the page at Y.

There are 10 turns on the coil and the current in the coil is 6.9 A.

Determine the resultant moment about P of the magnetic forces acting on the coil.

length of coil = 5.0 cm

width of coil = 3.5 cm

current = 6.9 A

number of turns = 10

magnetic flux density = 0.07 T

(4)

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Moment about P = ...

(Total for Question 11 = 4 marks)