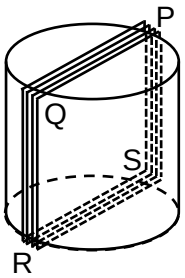
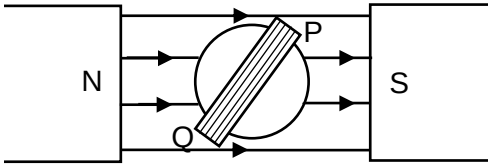
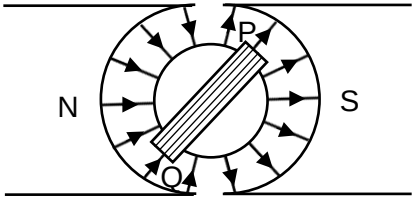
25 A long copper wire is wound round an iron cylinder to form a rectangular coil PQRS. A current flows through the coil.



The cylinder and the coil are placed in turn within magnetic fields X and Y and are free to rotate.



top view of coil in field X



top view of coil in field Y

Which of the following statements is not correct?

A The torque on the coil in each field varies sinusoidally as it rotates.

B The angular velocity of the coil in each field is not constant.

C Increasing the area of the coil will increase the torque on the coil in each field.

D The magnitude of the force on the side QR of the coil in each field remains constant as the coil rotates.