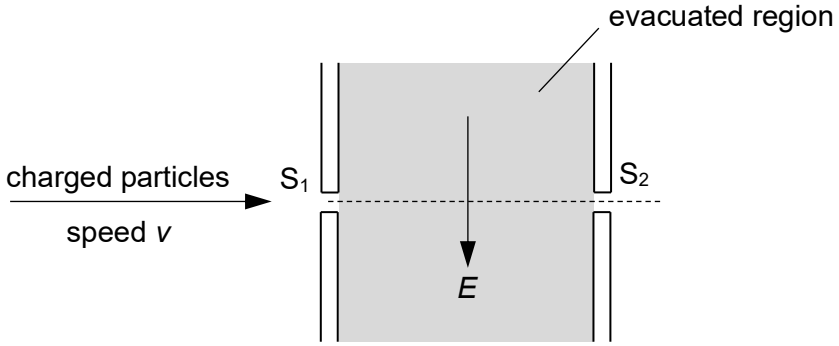
23 A narrow parallel beam of charged particles, each with speed v, passes through a slit S_1 into an evacuated region, moving in the direction towards slit S_2.

The evacuated region is shown shaded on the diagram.



Uniform magnetic and electric fields are applied in the same evacuated region, with the electric field E in the direction shown. The particles continue to exit through slit S_2.

What is the magnitude and direction of the magnetic field?

	magnitude	direction
A	$\frac{E}{v}$	into the plane of the paper
B	$\frac{E}{v}$	out of the plane of the paper
C	Ev	into the plane of the paper
D	Ev	out of the plane of the paper