29 Which statement gives a condition that enables diffraction to occur?

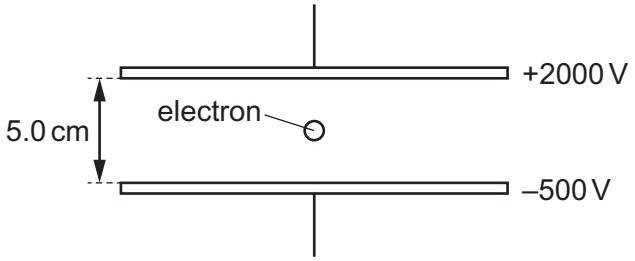
A A source of waves moves towards a stationary observer.

B A wave is partially blocked by an obstacle.

C Two coherent waves are superposed.

D Two waves of equal speed and frequency are travelling through the same part of a medium in opposite directions.

30 An electron passes into the space between two parallel plates that are 5.0 cm apart and which are maintained at electric potentials of +2000 V and –500 V, respectively.



What is the electric force on the electron?

A 1.6×10^{-15} N

B 4.8×10^{-15} N

C 6.4×10^{-15} N

D 8.0×10^{-15} N

31 Which statement about electric charges in a uniform electric field is **not** correct?

A Electric charges of the same magnitude, whether positive or negative, experience the same magnitude of force when placed in the same uniform electric field.

B The direction of the force on a positive charge placed in a uniform electric field is independent of the magnitude of the charge.

C The magnitude of the force on a positive charge placed in a uniform electric field is proportional to the magnitude of the electric field strength.

D The work done to move a positive charge a certain distance in a uniform electric field is independent of the direction of the movement.