Problem 3) Two charged particles A and B, each having a charge Q are placed a distance d apart. Where should a third particle of charge q be placed on the perpendicular bisector of AB so that it experiences maximum force? Also find the magnitude of the maximum force.

1) $\frac{d}{2\sqrt{2}}, \frac{16kQq}{3\sqrt{3}d^2}$
2) $\frac{d}{\sqrt{2}}, \frac{16kQq}{3\sqrt{3}d^2}$
3) $\frac{d}{2\sqrt{2}}, \frac{4kQq}{3\sqrt{3}d^2}$
4) $\frac{d}{\sqrt{2}}, \frac{4kQq}{3\sqrt{3}d^2}$

Ans) 1