Electric field due to a uniformly charged spherical surface. Consider a sphere of radius a that is uniformly charged over its surface with a total charge Q, and is situated in free space. The electric field intensity vector at a point whose radial distance from the sphere center is r is the same as $\mathbf{E}$ due to a point charge placed at the sphere center for the following range of values of r only:

(A) $a < r < \infty$.
(B) $r \gg a$.
(C) $0 < r < \infty$.
(D) $0 < r < a$.
(E) never (for none of the possible values of r).

Solution: (A)
Answer: (A)