Gaussian surface inside a volume charge distribution. A charge Q ($Q > 0$) is distributed uniformly throughout the volume of a sphere of radius a in free space. The outward flux of the electric field intensity vector E through the closed surface S shown in Fig.Q1.11 is

(A) $\Psi_E = Q/\epsilon_0$.
(B) $\Psi_E = -Q/\epsilon_0$.
(C) greater than $\Psi_E = Q/\epsilon_0$.
(D) positive and less than $\Psi_E = Q/\epsilon_0$.
(E) zero.

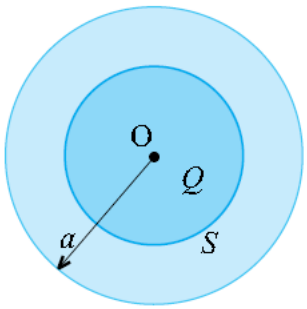

Figure Q1.11 Closed surface S inside a uniform volume charge distribution; for Question 1.14.

Solution: (D)
Answer: (D)