Answer on Question #59028, Physics / Electromagnetism |

Which of the following is not true about the electric field intensity $\vec{E}$ of a uniformly charged solid sphere?

$\vec{E}$ is maximum at the surface of the sphere

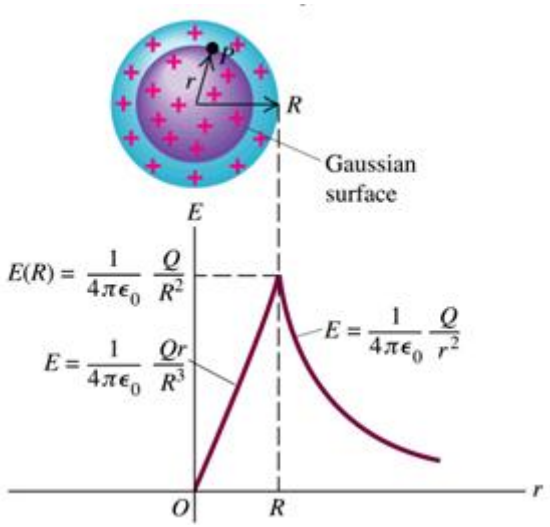
$\vec{E}$ is directly proportional to the distance from the centre of the sphere

$\vec{E}$ decreases as a square of the distance from the surface of the sphere

$\vec{E}$ decreases as a square of the distance from the centre of the sphere.

Solution:

Electric field of a non-conducting solid sphere having uniform volume distribution of charge:



$\vec{E}$ is maximum at the surface of the sphere: TRUE

$\vec{E}$ is directly proportional to the distance from the centre of the sphere: TRUE

$\vec{E}$ decreases as a square of the distance from the surface of the sphere: TRUE

$\vec{E}$ decreases as a square of the distance from the centre of the sphere: **NOT TRUE**

Answer: $\vec{E}$ decreases as a square of the distance from the centre of the sphere: **NOT TRUE**