

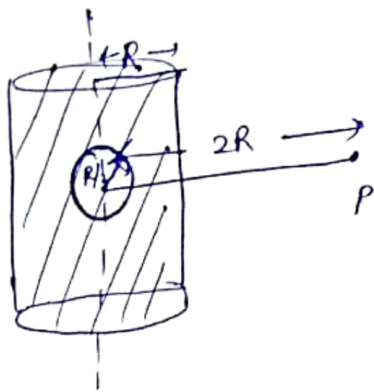
Ques 1) Find electric field due to Non-Conducting solid sphere where charge distribution is  $\rho = \rho_0 r$ .

Ques 2) Figure shows three dielectric solid spheres as



Compare the electric field at point P which is from center of spheres, at distance 'R'.

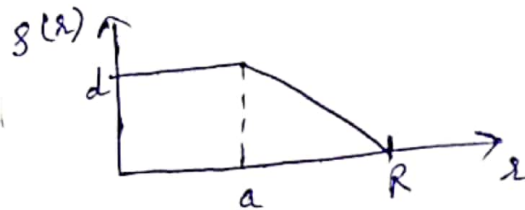
Ques 3)



The electric field at point P is  $E_p = \frac{23 \rho R}{16 K \epsilon_0}$  where  $\rho$  is the charge density of cylinder. Find value of K.

Ques 4) Passage Problem;

There is a nucleus where charge is non-uniformly distributed and  $Q = Ze$



i) The electric field at  $r = R$  is

- Independent of a
- $E \propto a$
- $E \propto a^2$
- $E \propto 1/a$

2) For  $a=0$ , values of  $d$  is:-

a)  $\frac{3ze}{4\pi R^3}$

b)  $\frac{3ze}{\pi R^3}$

c)  $\frac{4ze}{3\pi R^3}$

d)  $\frac{ze}{4\pi R^3}$

3) Electric field within the nucleus is generally observed to be ~~uniformly~~ linearly dependent on  $r^2$ .

This implies

a)  $a=0$

b)  $a=R/2$

c)  $a=R$

d)  $a=2R/3$