



Because of Today Tomorrow Will Be better

# RK Academy

One step Ahead to Your Success...



## WEEKLY TEST

CLASS: XII  
SUBJECT: PHY

FM: 20  
TIME: 40 MIN

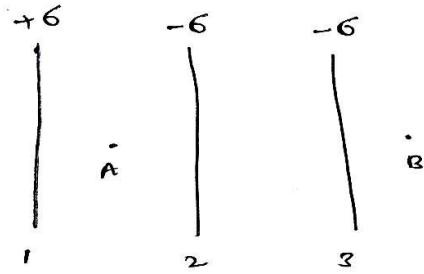
### (1 MARK)

1. A surface is held parallel to the direction of lines of force of the electric field, electric flux linked with it is  
a) zero                      b) infinite                      c) minimum                      d) maximum
2. Write the dimension of electric flux.
3. An electron and a proton are placed in the same uniform electric field. What will be the ratio of the acceleration of electron to that of proton?  
(a) 1                      (b) zero                      (c)  $m_p/m_e$                       (d)  $m_e/m_p$
4. Explain why electric flux is zero inside a charged spherical shell?
5. write the electric flux through the surface.



6. State and explain Gauss law. Draw Gaussian surface for a charged rod. (2 MARKS)
7. An infinitely charged conducting sheet of density  $\sigma$  placed in air. Find the expression for electric field due to the sheet using Gauss law. (2MARKS)
8. An electric field  $E$  acts along +ve x axis and -ve axis of magnitude  $200\text{N/C}$  and  $-200\text{N/C}$  respectively. A right circular cylinder of length  $20\text{cm}$  and radius  $5\text{ cm}$  has its centre at the origin and its axis along x-axis so that one flat face is at  $x = +10\text{cm}$  and other is at  $x = -10\text{cm}$ . Find net outward flux and net charge present in the cylinder. (3 MARKS)

9. Find net electric field at point A and B. (3 MARKS)



10. (5 MARKS)

- What is an electric dipole?
- A dipole is placed in an electric field at some angle. Deduce the expression for torque experienced by it.
- Two charges of  $+3\mu\text{C}$  and  $-3\mu\text{C}$  are placed at  $0.67 \times 10^{-3}\text{m}$  apart placed in an electric field of  $20\text{N/C}$ . find the maximum torque experienced by them.