

### Physics

- 1- Two tiny sphere each of mass  $M$  and charges  $+q$  and  $-Q$  respectively are connected by a massless rod of length  $L$ . They are placed in a uniform electric field at an angle  $\Phi$  with the electric field  $\Phi \sim 0$ . Calculate the minimum time in which the system align itself parallel to the electric field?
- 2- Electric dipole is placed in a non uniform electric field. Is there a net force on it?
- 3- If electric field equals zero at a given point ,must potential equal zero for that.
- 4- If you know electric field at a given point can you calculate potential at that point ?if not, what further information do you need.

### Maths

- (1) Solve questions number 13,14,15 exercise 2.2
- (2) Solve example number 11,12 on page number 50
- (3) Solve questions number 1,2 Miscellaneous exercise 2
- (4) Prove properties of matrix addition
- (5) Solve example number 8 on page 69