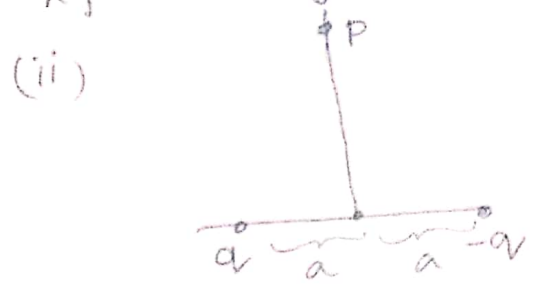
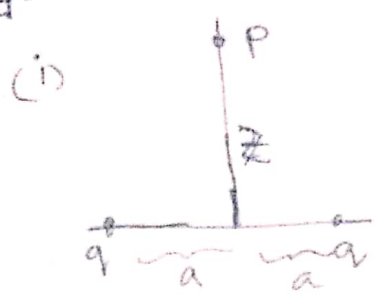


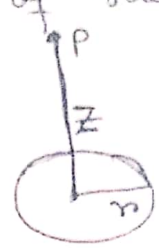
Electrostatic Field

1st part

1. Find the e. field at P for the given configurations below check what you get when $z \gg d$.



2. Find the e. field at z distance apart above centre of a circular loop of radius 'r' & carries uniform line charge λ .



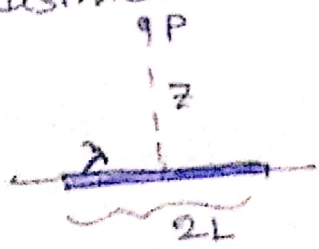
3. Use Gauss's law to find the e. field inside & outside a spherical shell of radius R carrying uniform surface charge density σ .

4. Find the e. field at distance 's' from an infinitely long st. wire carrying uniform line charge λ .

5. Which is a possible electrostatic field & why?

- a) $\vec{E} = m [xy \hat{i} + 2yz \hat{j} + 3xz \hat{k}]$ m is a constant
- b) $\vec{E} = m [y^2 \hat{i} + (2xy + z^2) \hat{j} + 2yz \hat{k}]$

6. Find Potential at a distance z above the centre of the charge distribution



$\lambda \rightarrow$ uniform line charge density

7. Find the capacitance of two concentric spherical metal shells with radii 'a' and 'b'.