Exam Paper

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1 Orbits and Circular motion

- Polar coordinates = $r\tilde{o}$
- angular velocity = $\delta\tilde{o}/\delta t$
- angular acceleration = $deltaw/deltat$
- centripetal acceleration = v^2/r
- tangential speed = wr

orbits: force that causes circular motion
force that causes centripetal acceleration

- Centripetal Force = $F = mv^2/r$
- period of orbit (w) = $2pi/T$

Gravity

- $F = mMG/r^2$
- $PE = -mMG/R$

2 Electricity

- $F = QE$
- $E = deltav/deltax$
- $F = qv * B$
  The ampere is defined as current through each wire to get a certain force
- $F = IL * B$
- $B = E/V$

3 Tourque

- $T = r * F$ or $t = RFsin$
- Torque is a quantity that resists a force
- $I = mr^2$ or $I = Icentreofmass + mD^2$
  $Foradisk$I=mr$^2/2$
- $p = mv$
- $L = Iw$
- $L = rp$

4 Random

A centripetal force is a force that causes centripetal acceleration