charge: 240 my unit 0 Electrostatics 172 $(50)(29)((6.023\times10^3) = 1.3761 \times 10^{26})$ 0 = 2 × 100 (= 1.26×1013) @ 1.6×10-19 1.25×1013 = 9.09×1013 1.376/x105 TIOU (44C F29=+24C force on 2 pic blc of typic $F_1 = \frac{kq}{d2} \frac{91}{(5\times10^{-2})^2} = \frac{79\times10^9}{(5\times10^{-2})^2} (2\times10^{-16})$ = 28.8 N towards right force on 24C b/c of to bic force on 2rc b/c or .0/2 $= (9 \times 10^{9})(0 \times 10^{-6})(2 \times 10^{-6}) = 43.2 \text{ N}$ towards $= \frac{1}{2} \times (9 \times 10^{-2})^{2}$ left $= \frac{1}{2} \times (2 \times 10^{-2})^{2}$ left $= \frac{1}{2} \times (2 \times 10^{-2})^{2} \times (2 \times 10^{-2})^{2}$ left the force is away from love (opposite direction) 3) Frut = -F, +F2 - (9×109)[-2(1×10-10)2(0.062) +(2(1×10-6)2)(0.032) =14.11N

5) 90-96=7.64c the force 16 garry 1 QC=9d=-7.64c Q=10394c d=0.1 FI= Kagaq + kagaq) 1 = 0 x 2(9x109)(7.5)(2x10-12) =54N (b) KE. = (1/2)mv2=eV (1/ex10-19)(40,000V) = 1.19×103 m/s (9.11×10-31kg) units of V/m & N/care needed due to unit substitution 7) 0 314 3 45 CO 30101 Levy Direct 4 21 10 300 JATILE BILLY 16,000 ME SH- ("OIXE) ("OIXE) ("OIXE) - 48,0 midate) The most person in blat wit Capital Conteand - Jears Brit - 100

- 8) d^{-2} cm $=7d^{-2} \times 10^{-2}$ m (9E) d = 32.0 keV $(2E) (E) (2 \times 10^{-2}) \text{ m} = 32 \times 10^{3} \text{ eV}$
 - $E = \frac{32 \times 10^3}{2(2 \times 10^5)} \frac{V}{m}$ $E = 8 \times 10^6 \text{ V/m}$ Selectric field between Plates
- a) Initial KE = Final Potential Energy

$$8\times10^{-3} = [(9\times10^{9})(2)(1.0\times10^{-19})(79)(1.6\times10^{-19})]$$

unit 1: capacitors, current and DC circuts

1)
$$C = 3.00 \, \mu C = 0.025 \, \mu F$$
 OR microfavads

unitz Dc circuts w/resistors in scries and pavallel jec circuts

1) Robert Rama Ra-13kA T=1×10⁻⁴ T=C=1×10⁻⁴ [1×10⁷F]

Rankon Right R=1×10³R R 1×10³ Warraky

TOTAL STREET

IT=VTRT = 3(158) H53 = 0.617A 3) a) 3(0.02)+0.1+0 TL= 0.67A 3(0.02)+0.1+0 PL-I2RL= (0.617)2(10) = 3.81 W PL-I2RL= 0.5 = I2(10) = IL 0.22UA IT = 3(158) 153 - 00224 = 6.27 1= 18 IL 3(0.02)+r+10

4) $0.0139 \text{ min/beat} \left(\frac{60 \text{ s}}{1 \text{ min}} \right) = 0.833 \frac{\text{s}}{1 \text{ min}}$ $T = RC \neq 0.833 = R(25 \times 10^{-9})$ $R = 4033 3.33 \times 10^{7} \Omega$

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TO THE WALL BUT TO THE TOTAL THE TOT

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unit 3 : magnetum 1 agnetum 1 (450=1005-5) TOTALUE TO EPPOSITETORCE FILTERS 200BIN-M 2) q =- 1. (ex10-19c) = V = 4. (1x108 m/s) B= 1.26T, F=1.4 x10-16N 161 = qub sino) 1.4×10-14=1.6×10-19(4.1×103) (1.26(1MB) 1.4×10-16 $(1.0\times10^{-19})(4.1\times10^{3})(1.26) = 0.1707$ $\theta = 9.8^{\circ}$ or 170.2° 4) 1cm > 0.01m = 11 = 01 = 0 = 0 = 0 = 0 = 0 = 0 25 cm = 0.25 m 2.00T FORB, 100A FOR I and 0.25m FOR L F=2.00T × 100 A x 0.25 m = 50 N

I MARLADEM & TITLE 5) L=20cm=0.2m # of turns N=200, current I= 25A Force on each side F=1000B H Torque to opport force F.L=200 200BN-m gruen 2006 = 800 300 =) B=1.6T 6 B direction Case b [HXIO] (12611) (12611) (10516-6)(411x103)(1.26) 7) Curren I= 9/V = 450 x106 = 1500 A 300,000 magnetic field B = MOI/2TT2 = 107x 4TT2 x 1500 0 = mol () 2TT x 2002 0 - mo a c B=150 × 10⁷T I NOT MOS O DAME I NOT ALLE , SI NOT TELLE , STORE TO STORE