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Chapter 23-26, Serway; ANY TYPES OF CHEATING WILL MAKE YOU FAIL!
Please write down the answers on the blank space or on the back of this paper. Answer should be in English. [ ] indicates the question points.

Q1. If a positively charged particle Q moves in the horizontal direction with speed 3.0×10^8 m/s and enters in a uniform vertical electric field of magnitude of 9.60×10^5 N/C, Calculate (a) the time interval required for the particle to travel 5.0 cm horizontally, (b) its vertical displacement during the time interval in which it travels 5.0 cm horizontally, and (c) the horizontal and vertical components of its velocity after it has traveled 5.0 cm horizontally. [10+10+20 = 40]

Q2. (a) Define electric flux and write down the Gauss's law for a point charge enclosed in a surface. (b) Let a point charge Q is set at the center of a cube of edge L = 10 cm and other six identical point charges 'q' are positioned symmetrically around Q *as* shown in figure bellow. Determine the electric flux through one face of the cube. Let Q = + 5 µC and q = -2 µC. (c) Calculate the electric potential between Q and q if their separation distance is $\dfrac{L}{2}$. [5+15+10 =30]
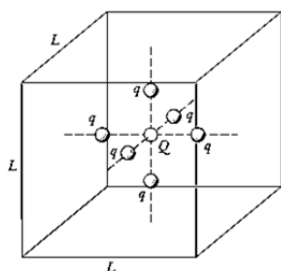
Q3. Suppose your cell phone battery has three internal capacitors C_1=5 µF, C_2=15µF and C_3 =20µF. If you supply 5V to charge them, (a) find out the total charge stored in capacitors connected in parallel combinations. (b) How much voltage do you need to supply to store same amout of charge if C_3 is in seris combination with the parallel combination of C_1 &C_2? [15+15=30]

General Physics II Quiz 8(103/ 2015).
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