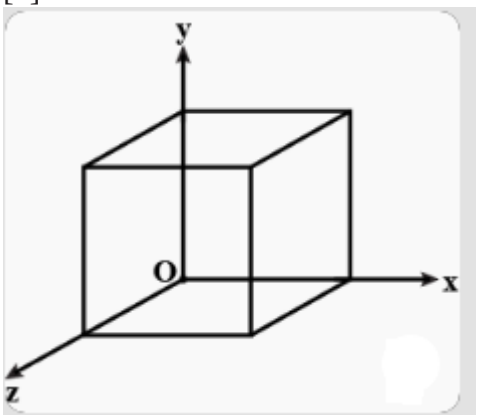
United International University

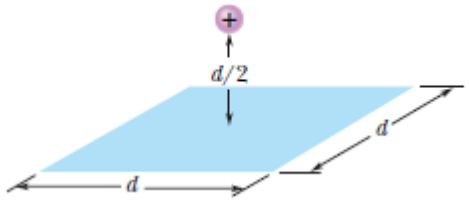
School of Science and Engineering

Class Test V; Year 2020; Semester: Fall
Course: PHY 2105; Title: Physics
Marks: 10; Section: B; Time: 30 minutes

1. A Gaussian cube of side 20cm placed in an electric field of $\vec{E} = 2\hat{i} + 3\hat{j}$. Calculate the electric fluxes through all faces of the cube. What is the net charge enclosed by the cube. [4]



2. In Fig. below, a proton is a distance *d*/2 directly above the center of a square of side *d*. If d = 6cm, what is the magnitude of the electric flux through the square? [3]



3. 1C charge is placed at the center of a Gaussian sphere of radius R=8cm. Calculate the electric flux at the surface of the sphere.. [3]