General Physics B (II) **Mini-Test 3** March 8, 2022

Answers without **supporting work** or **necessary unit** will not be given full credit. If the meaning of the question isn't clear, please ask TA! You have **25mins** to complete this mini-test.

Q.1 Figure 1. shows a disk with surface charge density $\sigma = \frac{10}{3\pi}\ Cm^{-2}$ and four points with different charge ($q_1 = 10C\ , q_2 = 27C\ , q_3 = 9C\ , q_4 = -6C$), the radius of disk $R = 5m$ and the distance between origin and the center of disk is $12m$. What is the electric potential at origin? (10 points)

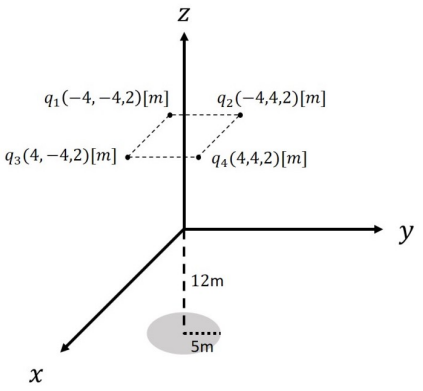

Figure 1

Q.2 Figure 2. shows a symmetrical Wheatstone Bridge capacitor. The capacitance of $C1 = 3\ F$, $C2 = 5\ F$ and $C3 = 15\ F$. What is the equivalent capacitance C_{eq} of this circuit when system reaches equilibrium? (10 points)

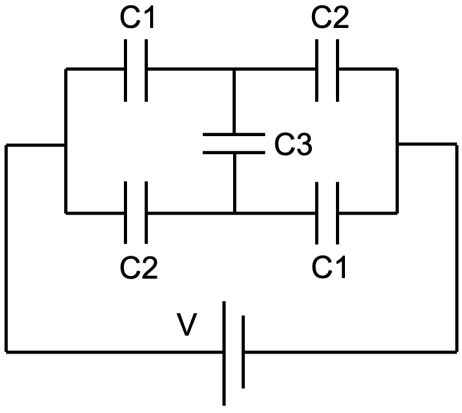

Figure 2