Badji- Mokhtar University -ANNABA Faculty of technology
Computer science department & Electronics
Department 1st year Computer sciences&
automatics (2023-2024) Online courses

Coursework Exercie 4 of Physics 2

Electric conductors and capacitors

Exercise 1:

Consider a planar capacitor made up of two parallel armatures spaced e apart and with a surface S, charged with two surface charges +σ and -σ on each surface S.

-Calculate the capacitance of this capacitor. (we assume that the two planes are infinite)

Exercise 2:

Calculate the capacitance of a cylindrical capacitor made up of two concentric conducting cylinders with the same axis and respective radius R1 and R2 (R1<R2) and charge Q

Exercise 3:

A spherical capacitor formed of two concentric spheres, of radii R1 and R2 (R1< R2). The spheres of radius R1, R2 carry charges Q, -Q respectively.

1-Calculate the capacitance of this capacitor.

2-What becomes of the value of this capacity if R2 tends towards R1