Resonance®
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TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

PHYSICS
DPP
DAILY PRACTICE PROBLEMS
DPP NO. 1

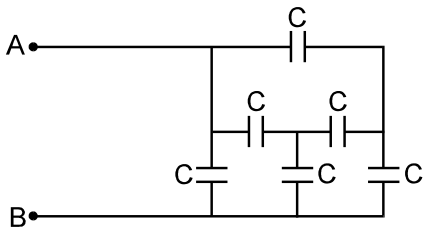
PHYSICS: CAPACITANCE

DPP No. : 1

1. A parallel plate condenser is connected to a battery of e.m.f. 4 volt. If a plate of dielectric constant 8 is inserted into it, then the potential difference on the condenser will be-

(1) 1/2 V (2) 2V (3) 4V (4) 32V

2. The equivalent capacitance between point A and B is



(1) C/4 (2) C/2 (3) C (4) 2C

3. If there are n capacitors of capacitance C in series connected to V volt source, then the energy stored is equal to :

(1) CV (2) $\frac{1}{2}nCV^2$ (3) CV^2 (4) $\frac{1}{2n}CV^2$

4. A battery is used to charge a parallel plate capacitor till the potential difference between the plates becomes equal to half of the electromotive force of the battery. The ratio of the energy stored in the capacitor and the work done by the battery will be

(1) 1 (2) 2 (3) 1/4 (4) 1/2

5. A parallel plate condenser with a dielectric of dielectric constant *K* between the plates has a capacity *C* and is charged to a potential *V* volts. The dielectric slab is slowly removed from between the plates. The net work done by the system in this process is (assume battery remains connected)

(1) $\frac{1}{2}$ (1–K)CV^2 (2) $CV^2(K-1)/K$ (3) $(K-1)CV^2$ (4) zero

6. Two isolated charged metallic spheres of radii R_1 and R_2 having charges Q_1 and Q_2 respectively are connected to each other, then there is:

(1) No change in the electrical energy of the system

(2) An increase in the electrical energy of the system

(3) Always a decrease in the electrical energy of the system

(4) A decrease in electrical energy of the system until $Q_1 R_2 = Q_2 R_1$

7. The outer sphere of a spherical air capacitor is earthed. For increasing its capacitance-

(1) Vaccum is created between two sphere

(2) Dielectric material is filled between the two spheres

(3) The space between two spheres is increased

(4) The earthing of the outer sphere is removed

8. The capacity of an isolated conducting sphere of radius R is proportional to-

(1) R^2 (2) $\frac{1}{R^2}$ (3) $\frac{1}{R}$ (4) R

9. The value of one farad in e.s.u. is-

(1) 3×10^{10} (2) 9×10^{11} (3) $\frac{1}{9} \times 10^{-11}$ (4) $\frac{1}{3} \times 10^{-10}$

10. The work done against electric forces in increasing the potential difference of a condenser from 20V to 40V is W. The work done in increasing its potential difference from 40V to 50V will be

(1) 4W (2) $\frac{3W}{4}$ (3) 2W (4) $\frac{W}{2}$