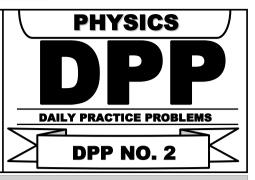


**TARGET: NEET (UG) 2024** 

**Course:** SARANSH (Youtube Live CRASH COURSE)



## PHYSICS: CAPACITANCE

**DPP No.: 2** 

1.	The plate separation in a parallel plate condenser is d and plate area is A. If it is charged to V volt &
	battery is disconnected then the work done in increasing the plate separation to 2d will be-

(1) 
$$\frac{3}{2} \frac{\varepsilon_0 AV^2}{d}$$
 (2)  $\frac{\varepsilon_0 AV^2}{d}$  (3)  $\frac{2\varepsilon_0 AV^2}{d}$ 

(2) 
$$\frac{\epsilon_0 AV^2}{d}$$

(3) 
$$\frac{2\epsilon_0 AV^2}{d}$$

$$(4) \ \frac{\varepsilon_0 A V^2}{2 d}$$

2. An uncharged capacitor of capacitance 8.0 
$$\mu F$$
 is connected to a battery of emf 6.0 V through a resistance of 24  $\Omega$ , then

- (i) the current in the circuit just after the connections are made is:
- (1) 0.25 A
- (2) 0.5 A
- (3) 0.4 A
- (4) 0 A
- (ii) the current in the circuit at one time constant after the connections are made is :
- (1) 0.25 A
- (2) 0.09 A
- (3) 0.4 A
- (4) 0 A

3. The distance between the plates of a parallel plate condenser is d. If a copper plate of same area but thickness 
$$\frac{d}{2}$$
 is placed between the plates then the new capacitance will become-

- (1) half
- (2) double
- (3) one fourth
- (4) unchanged
- A parallel plate condenser with plate separation d is charged with the help of a battery so that U<sub>0</sub> 4. energy is stored in the system. A plate of dielectric constant K and thickness d is placed between the plates of condenser while battery remains connected. The new energy of the system will be-
  - (1) KU<sub>0</sub>
- (2)  $K^2U_0$
- (3)  $\frac{V_0}{V}$
- (4)  $\frac{U_0}{\kappa^2}$

- (1)  $C \propto R^2$
- (2) C  $\propto$  R<sup>-2</sup>
- (3) C ∝ R
- (4) C  $\propto$  R<sup>-1</sup>

- (1)  $\frac{1}{2}$ CV<sup>2</sup>
- (2)  $\frac{1}{2}Q^2V^2$  (3)  $\frac{1}{2}\frac{Q^2}{C^2}$
- (4)  $\frac{1}{2} \frac{Q}{C^2}$



- 7. Unit of capacitance is
  - (1) coulomb
- (2) volt
- (3) henry
- (4) farad

- The capacitance of a capacitor is 8.
  - (1) directly proportional to the dielectric constant of the medium between the plates
  - (2) inversely proportional to the dielectric constant of the medium between the plates
  - (3) proportional to the square of the dielectric constant of the medium between the plates
  - (4) independent of the dielectric constant of the medium between the plates
- 9. If the energy of a capacitor of capacitance 2 µF is 0.16 joule, then its potential difference will be
  - (1) 800 V
- (2) 400 V
- $(3)\ 16 \times 10^4\ V$
- $(4) 16 \times 10^{-4} \text{ V}$
- 10. A capacitor of  $6\mu F$  is charged to such an extent that the potential difference between the plates becomes 50 V. The work done in this process will be
  - $(1) 7.5 \times 10^{-2} J$
- (2)  $7.5 \times 10^{-3}$  J
- (3)  $3 \times 10^{-6} \text{ J}$  (4)  $3 \times 10^{-3} \text{ J}$