

Name:		Roll No.		Subject	Physics
Test Type	MSQs, Short & Long Questions	Class	12 th	Date	
Chapter	12 Electron Volt to End	Unit	12	Time	

Q. No. 1 Tick the best option

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- In which year, Millikan devised a technique with which he measured the charge on electron:
(a) 1901 (b) 1909 (c) 1911 (d) 1919
- In Millikan's experiment, the oil drop can be suspended between two plates when gravitational force is equal to:
(a) Magnetic force (b) Nuclear force (c) Electric force (d) None of these
- The equation for discharging of a capacitor is
(a) $q=q_0(1-e^{-t/RC})$ (b) $q=q_0 e^{-t/RC}$ (c) $q=q_0(1-e^{-RC/t})$ (d) $q=q_0 e^{-RC/t}$
- If the length, width and separation between the plates is doubled the its capacitance becomes:
(a) Double (b) Half (c) Four times (d) Remains same
- The effective capacitance is reduced when capacitors are connected in
(a) Series (b) Parallel
(c) Series parallel combination (d) None of these
- If $2\mu F$ and $4\mu F$ capacitors are connected in parallel the resultant capacitance
(a) $1.3\mu F$ (b) $8\mu F$ (c) $6\mu F$ (d) $0.5\mu F$
- A $5M\Omega$ resistor is connected with $2\mu F$ capacitor. The time constant of circuit is:
(a) $0.1s$ (b) $2.5s$ (c) $1s$ (d) $10s$
- If 60 capacitors each of capacitance C are connected in series and then in parallel what is the ratio of $C_s/C_p =$
(a) $1/60$ (b) 3600 (c) $1/3600$ (d) 250
- If potential difference across two plates of a parallel plate capacitor is doubled and capacitance doubled, then the energy stored in it will be
(a) 2 times (b) 4 times (c) 8 times (d) remain same
- A $20\mu F$ capacitor is charged to $200V$ potential difference. The energy stored in capacitor is:
(a) $4J$ (b) $4000J$ (c) $4 \times 10^{-3}J$ (d) $0.4J$
- If a charged capacitor is connected to earth its charge
(a) Decreases (b) Increases (c) Remain same (d) None of above
- In the time constant of RC circuit, how much charge is stored, out of maximum charge q_0 :
(a) $0.37 q_0$ (b) $0.51 q_0$ (c) $0.63 q_0$ (d) $0.93 q_0$
- Energy density in the case of capacitor is always proportional to:
(a) E^2 (b) C (c) V^2 (d) ϵ_0
- Due to polarization electric field $\vec{E}$ and potential difference V between the parallel plate capacitor:
(a) Increases (b) Decreases (c) No change (d) $\vec{E}$ increases, V decreases
- A one coulomb charge of one gram is in electric field of $10 N/C$. The acceleration will be:
(a) $10000 ms^{-2}$ (b) $10 ms^{-2}$ (c) $1 ms^{-2}$ (d) $0.10 ms^{-2}$
- $M\Omega$ times $pF = ?$
(a) $m.sec$ (b) $n.sec$ (c) $\mu.sec$ (d) sec
- Which forces cannot be shielded?
(a) Electrical Forces (b) Magnetic Forces (c) Gravitational forces (d) Nuclear forces
- A $1\mu F$ capacitor is subjected to $4000V$ potential difference the energy stored in capacitor is:
(a) $8J$ (b) $16J$ (c) $4 \times 10^{-3}J$ (d) $12 \times 10^{-3}J$
- If 60 capacitors each of capacitance C are connected in series and then in parallel what is the ratio of $C_p/C_s =$
(a) $1/60$ (b) 3600 (c) $1/3600$ (d) 250
- Second/ohm is equal to:
(a) Farad (b) Coulomb (c) Joule (d) Ampere

Q. No. 2 Write the short answer of these following questions

3 x 2 = 06

- What is the effect of polarization on the capacitance of parallel plate capacitor?
- Define electron volt. Show that, $1 eV = 1.6 \times 10^{-19} J$
- Write two similarities of electric and gravitational forces.

Q. No. 3 Long question

05

- Define Capacitor. Drive an expression for energy stored by the capacitor.