SMART TEST SERIES

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Name:		Subject:	Physics-12
Roll # :		Unit(s):	12,
Class:	Inter Part-II	Test:	Type 8 - Short Test (No Choice) - Marks=30
Date:		Time:	

Q.1 Circle the Correct Answers. (6x1=6)

1 One Joule is equal to:
(A) $1.6 \times 10^{-19} ev$ (B) $1.6 \times 10^{19} ev$ (C) $6.25 \times 10^{-18} ev$ (D) $6.25 \times 10^{18} ev$

2 The force on an electron in a field of 1×10^{8} NC^{-1} will be:
(A) 1.6×10^{-8} N (B) 1.6×10^{-11} N (C) 1.6×10^{-19} N (D) 1.6×10^{-27} N

3 Which one of the following can be taken as measure of electric field intensity?
(A) $\frac{F}{A}$ (B) $\frac{\phi_e}{A}$ (C) $\frac{qA}{\varepsilon_o}$ (D) $\frac{\phi \varepsilon_o}{A}$

4 Total flux through a closed surface depends on:
(A) Shape of surface (B) Charge enclosed only (C) Medium only (D) Charge and Medium

5 Electric flux does not depend upon:
(A) Medium (B) Shape of closed surface (C) Charge enclosed
(D) Medium and charge enclosed

6 An ECG records the between points on human skin generated by electric process in the heart:
(A) Heart beat (B) Pulse rate (C) Pressure (D) Voltage

Q.2 Write short answers of the following questions. (8x2=16)

(i) Define Electric force and Electrostatics.
(ii) Electric lines of forces never cross one another why?
(iii) Define xerograpy and photocondutor.
(iv) Describe working of inkjet printer briefly.
(v) The potential is constant throughout a given region of space. Is the electric field zero or non-zero in this region? Explain.
(vi) Define capacitance also define its unit.
(vii) What is polarization and how dipoles are formed in dielectric?
(viii) Define time constant for RC circuit also draw (q-t) graph for charging capacitor in RC circuit.

NOTE: Attempt the long question. (5+3=8)

3(a) Define capacitance. Derive an expression for the capacitance.

(b) In Bohr's atomic model of hydrogen atom, the electron is in an orbit around the nuclear proton at a distnace of 5.29×10^{-11} m with a speed of 2.18×10^{6} ms-1 (e = 1.60×10^{-19}C, mass of electron = 9.10×10^{-31}kg). (a) Find the electric potential that a proton exerts at this distance. (b) Total energy of the atom in eV (c) The ioniation energy for the atom in eV.