ECAT Physics Chapter 12 Electrostatics

Sr	Questions	Answers Choice
1	A point charge A of charge +4μC and another B of charge -1μC are placed in air at a distance 1 m apart. Then the distance of the point on the line joining the charge B, where the resultant electric field is zero, is (in m)	A. 2 B. 1 C. 0.5 D. 1.5
2	The force of repulsion between two point charges is F, when these are at a distance 0.1 m apart. Now the point charges are replaced by sphere of radii 5 cm each having the same charge as that of the respective point charges. The distance between their centre is again kept 0.1 m ; then the force of repulsion will	A. Increase B. Decrease C. Remain F D. Become 10F/9
3	The energy required to charge a capacitor of $5\mu F$ by connecting D.C. source of 20 KV is	A. 10 KJ B. 5 KJ C. 2 KJ D. 1 KJ
4	Which one of the following has larger value of relative permitivity E_r at room temperature?	A. Vaccum B. Air C. Glass D. Water
5	A capacitor of capacity $1\mu F$ is charged to 1 KV. The energy stored in J	A. 5 B. 0.5 C. 0.005 D. 50
6	Which of the following does not obey ohm's law?	A. Copper B. Al C. Diode D. None
7	The dot product of electric field intensity E and vector area A is called	A. Electric potential B. Electric flux C. Electric field D. Magnetic field
8	The electric potential at the surface of an atomic nucleus (Z = 50) of radius 9.0 x 10^{-15} is	A. 9×10^5 V B. 9 V C. 8×10^6 V D. 80 V
9	The capacity of a parallel plat capacitor depends on the	A. Type to metal used B. Thickness of plates C. Potential applied across the plates D. Separation between the plates
10	Resistance of a conductor depends upon	A. the quantity of current passing through it B. the voltage applied between its end C. its dimensions, physical state and nature of its material D. all of the above
11	A cube of metal is given a positive charge Q. For the above system, which of the following statements is true?	A. Electric potential at the surface of the cube is zero B. Electric potential within the cube is zero C. Electric filed is normal to the surface of the cube D. Electric filed varies within the cube
12	The fractional change in resistance per kelvin is known as	A. temperature coefficient B. resistance coefficient C. super temperature D. critical temperature
13	A piece of fuse wire melts when a current of 15 ampere flows through it. With this current. If it dissipates 22.5 W, the resistance of fuse wire will be	A. Zero B. 10 Ω C. 1 Ω D. 0.10 Ω

14	The value of electrical constant of proportionality k is	A. 9×10^9 Nm^{2}C^{-2} B. 9×10^{-9} Nm^{2}C^{-2} C. 9×10^{10} Nm^{2}C^2 D. 9.85×10^{-12} N^{-1}C^{-2}
15	The capacitance of a parallel plate capacitor depends upon	A. Area of the plates B. Separation between the plates C. Medium between the plates D. All of the above
16	If 2.2 kilowatt power is transmitted through 1 10 ohm line at 22000 volt, the power loss in the form of heat will be	A. 0.1 watt B. 1 watt C. 10 watt D. 100 watt
17	A parallel plate capacitor is first charged and then a dielectric slab is introduced between the plates. The quantity that remains unchanged is	A. Charge Q B. Potential V C. Capacity D. Energy U
18	Electric generators which convert mechanical energy into	A. solar energy B. thermal energy C. kinetic energy D. electrical energy
19	The unit of intensity of electric field is	A. newton/coluomb B. jule/coluomb C. volt x metre D. newton/metre
20	A wire of radius r has resistance R. If it is stretched to a wire of r/2 radius, then the resistance becomes	A. 2R B. 4R C. 16R D. Zero