XII - MODEL EXAM - 2019

PHYSICS

TOTAL MARK :- 50M

SECTION - A

I Answer all the Question 1×10=10M

(1) The permittivity of free space values ---?

a) 8.854×10^{-12} $c^2 N^{-1} m^{-2}$

b) 8.854×10^{12} $c^2 N^{-1} m^{-2}$

c) 9×10^9 N

d) 9×10^{-9} N

(2) The O-H bond length is ---?

a) 0.958×10^{-10} m b) 0.958×10^{10} m

c) 9.58×10^{-10} m d) 9.58×10^{10} m

(3) The work done to move a charge q between any two points A and B is ----?

a) $W = V_B - V_A$ b) $W = V_B + V_A$

c) $W = q(V_B - V_A)$ d) $W = q(V_B + V_A)$

(4) χ_e is a constant called ----?

a) Electric susceptibility

b) Magnetic susceptibility

c) Electric permeability

d) Magnetic permeability

(5) computer keyboard keys are constructed using ----?

a) capacitor b) charge

c) Resistor d) Inductor.

(6) The drift velocity of electrons in the wire is ——

a) 10^4 ms^{-1} b) 10^{-4} ms^{-1}

c) 10^9 ms^{-1} d) 10^{-2} ms^{-1}

(7) The human body contains has low Resistance of around ——

a) 100Ω b) 200Ω

c) 1000Ω d) 2000Ω

(8) Superconductor Example for —

a) Mercury b) Ammonia

c) Gold d) none of the above

(9) The citric acid in the lemon acts as an electrolyte. The potential can be measured using a — ?

a) Ammeter c) Galvanometer

c) Voltmeter d) multimeter

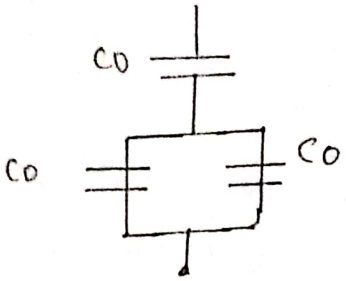
(10) Carbon arc furnaces produce temperatures up to ----?

a) 300° c b) 3000° C

c) 15000°C d) 0.250°C.

SECTION - B 4x2=8m

II Answer any four questions compulsary (14)

(11) 

calculate the Resultant capacitance ?

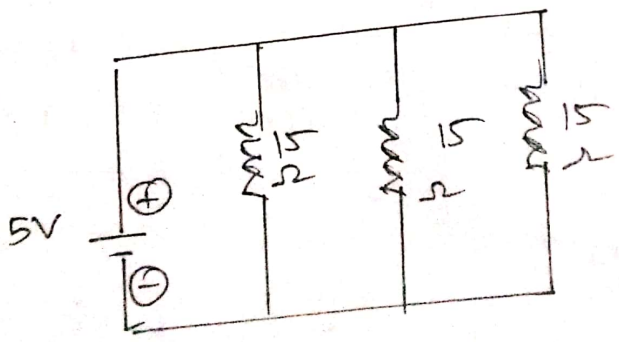
(12) write a short note on superposition principle ?

(13) An Electric dipole is placed at an alignment angle 30^0 with an electric field of $2 \times 10^5 NC^{-1}$. It experiences a torque equal to 8 Nm. The charge on the dipole if the dipole length is 1cm.

(14) why current density is a vector but current is a scalar?

(15) Define Seebeck effect

(16) what is the current out of the batteries ?



(17) state ohm's law

SECTION - C 4×3 = 18M

III Answer any (4) Questions compulsary (23)

(18) Calculate the number of electrons in one coulomb of negative charge ?

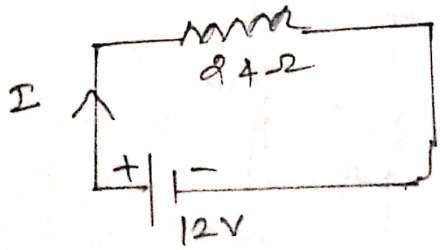
(19) Explain in detail the effect of a dielectric placed in a parallel plate capacitor

(20) what are the differences between coulomb force and gravitational force?

(21) State the applications of seebeck Effect

(22) In a meter bridge with a standard resistance of 15Ω in the right gap the ratio of balancing length is 3:2 find the value of the other Resistance

(23)



what is the current through the Resistor?

(24) Define Resistivity give unit

SECTION - D. 4X5=20 M

IV Answer all the Questions

(25) a) Explain in detail the construction and working of a van de craadf generator

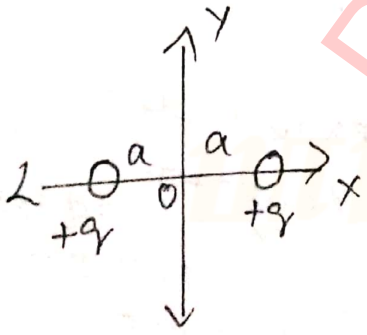
(or)

b) obtain the expression for electric field due to an uniformly charged spherical shell

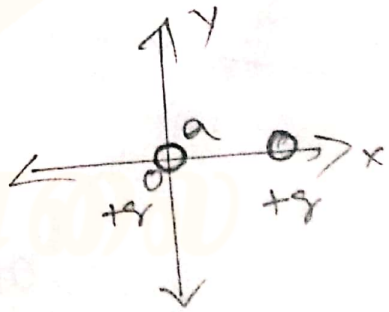
(26) a) Derive an expression for Electrostatic potential due to an electric dipole

(or)

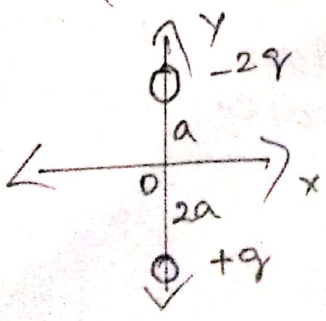
b) calculate the electric dipole moment for the following charge configurations



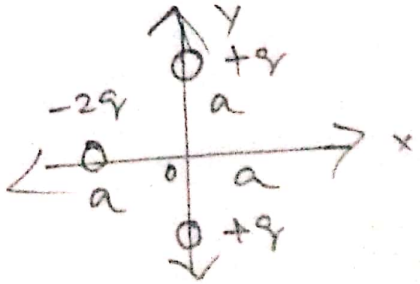
(a)



(b)



(c)

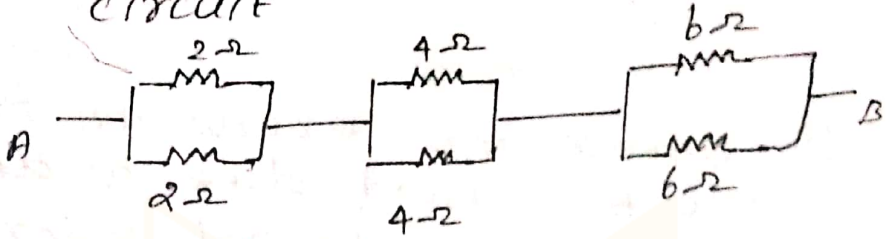


(d)

(27) a) Explain the determination of unknown Resistance using meter bridge

(or)

b) calculate the equivalent Resistance between A and B in the given circuit



(28) a) How the emf of two cells are compared using potentiometer?

(or)

b) Explain the equivalent Resistance of a series and parallel network.

All the best.

prepared by

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