AAFAQ ACADEMY – KASUR

Paper: Physics   **Chapter (12)1**   **Class: F.Sc. Part – II**
ELECTROSTATICS

Name: _____ **Roll No: (in words)** _____

EVENING GROUP
OBJECTIVE TYPE

Total Marks: 11   **Paper Code:** _____   **Total Time: 10 Minutes**

NOTE: Write your **Roll No.** in space provided. Using lead pencil will result in loss of marks.

Q.No.1: You have four choices for each objective type question as A,B,C and D. The choice which you think is correct; fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Sr. No.	QUESTION	A	B	C	D
1.	Which of the following is the principle of a capacitor?	Charging by polarization	Charging by conduction	Charging by electrostatic induction	Charging by radiation
2.	A capacitor is a perfect insulator for	Direct current	Alternating current	For AC and DC	None of these
3.	A point charge is brought near an isolated metal cube, then	Interior of cube becomes +vely charged	Interior of cube becomes −vely charged	Interior charge – less but surface get charged	Interior becomes +ve and surface is neutral
4.	ECG is related to	Eye	Brain	Heart	Stomach
5.	In Milikan's experiment, oil droplet is suspended between plates if	$F_e \prec F_g$	$F_e \succ F_g$	Either (A) or (B)	$F_e = F_g$
6.	If $1C$ charge is moved a P.D. of $100V$, then gained in K.E. will be	$10J$	$100J$	$1J$	$0 \bullet 1J$
7.	If P.D. between two oppositely charged plates is doubled and distance between them is halved, then electric field is	Halved	Doubled	Increased by three times	Increased by four times
8.	If a substance is negatively charged, then its mass will be	Decreased	Increased	Remains same	May be increases or decreases
9.	Gauss's law is only applicable to	Closed surface	Curved surface	Arbitrary surface	Any surface
10.	Coulomb's force is maximum in	Water	Glass	Ether	Vacuum
11.	Selinium is	Conductor in the dark	Insulator in the light	Conductor in the light	None of these

SUBJECTIVE TYPE

Total Marks: 29   **Time Allowed: 0 Hours 50 Minutes**

SECTION – I (SHORT QUESTIONS)

2. Attempt any FIVE questions.   **(5×2=10)Marks**

   i. How can you identify that which plate of a capacitor is positively charged?

   ii. Prove that electric intensity is minus potential gradient.

   iii. Give some dissimilarity between gravitational and electrostatic forces.

   iv. Is it true that Gauss's law states that the total number of lines of forces crossing any closed surface in the outward direction is proportional to the net positive charge enclosed within the surface?

   v. Prove that ohm times farad is equal to second.

   vi. Is $\vec{E}$ necessarily zero inside a charged rubber balloon if balloon is spherical? Assume that charge is distributed uniformly over the surface.

   vii. Derive relation between joule and eV.

SECTION – II (ESSAY TYPE) Attempt given question

3. Do as directed...

   i. What is oil droplet method? How it can be used to find charge on an electron?   (5)

   ii. The time constant of a series RC circuit is t = RC. Verify that an ohm times farad is equivalent to second.   (3)

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EVENING GROUP
SECTION – II (Practical)

4. (a) <u>Write answer of TWO questions.</u> (3×2=6)

  i. What is principle of Wheatstone bridge?
  ii. What is resistance? Define its units.
  iii. What is the effect of temperature on resistance of the conductor?
  iv. What is Wheatstone bridge?

4. **(b)** Write procedure to determine the unknown resistance by using slide wire bridge. (3)
  (c) Answer the following questions on the basis of graph drawn between $(R \times S)$ and $(R - S)$.(4)

  i. What you conclude from the graph?
  ii. Find the slope of the graph.

Good Luck
Ch. Khalid Mahmood Ashraf