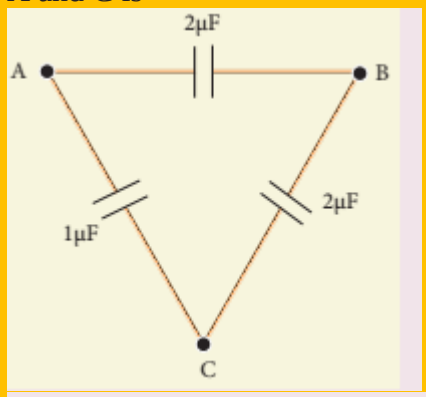
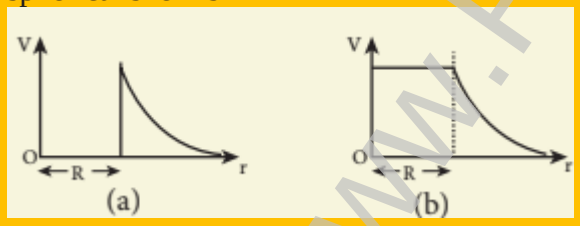
Sir Cv Raman Coaching Centre – Idappadi,Salem -637101
Xll Physics ,First Term Model Question Paper -2026
Total Mark: 35 , Time; 1 Hours
Section – A (5 X 1 = 5 M)
Choose the correct best answer

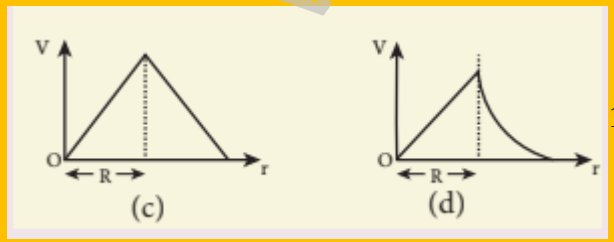
1. Three capacitors are connected in triangle as shown in the figure. The equivalent capacitance between the points A and C is



(a) 1μF (b) 2 μF
(c) 3 μF (d) $\frac{1}{4}$μF

2. A thin conducting spherical shell of radius *R* has a charge *Q* which is uniformly distributed on its surface. The correct plot for electrostatic potential due to this spherical shell is





3. A piece of copper and another of germanium are cooled from room temperature to 80 K. The resistance of a) each of them increases b) each of them decreases c) copper increases and germanium decreases d) copper decreases and germanium increases
4. In India electricity is supplied for domestic use at 220 V. It is supplied at 110 V in USA. If the resistance of a 60W bulb for use in India is *R*, the resistance of a 60W bulb for use in USA will be

(a) *R* (b) 2*R*
(c) $\frac{R}{4}$ (d) $\frac{R}{2}$

5. A non-conducting charged ring carrying a charge of *q*, mass *m* and radius *r* is rotated about its axis with constant angular speed ω. Find the ratio of its magnetic moment with angular momentum is

(a) $\frac{q}{m}$ (b) $\frac{2q}{m}$
(c) $\frac{q}{2m}$ (d) $\frac{q}{4m}$

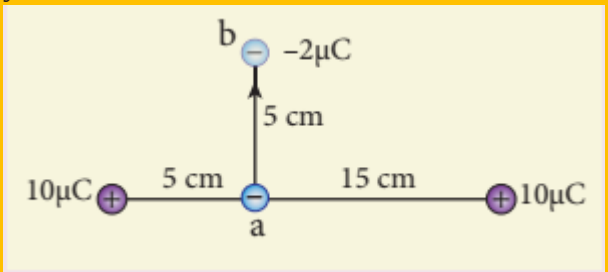
Section – B (5 x 3 = 15 m)
Answer any five questions compulsory q.no 11.

6. What is magnetic field?
7. A cell supplies a current of 0.9 A through a 2 Ω resistor and a current of 0.3A through a 7 Ω resistor. Calculate the internal resistance of the cell.
8. What do you mean by internal resistance of a cell?
9. Difference between polar and non polar molecule
10. Relation between drift velocity and mobility
11. The horizontal component and vertical component of Earth's magnetic field at a place are 0.15 G and 0.26 G respectively. Calculate the angle of dip and resultant magnetic field. (G-gauss, cgs unit for magnetic field 1G = 10–4 T)
12. Write down Coulomb's law in vector form and mention what each term represents.

Section – C (3 x 5 = 15 m)
Answer All questions

13. a) Explain in detail the construction and working of a Van de Graaff generator.
(or)

b) A point charge of +10 μC is placed at a distance of 20 cm from another identical point charge of +10 μC. A point charge of -2 μC is moved from point a to b as shown in the figure. Calculate the change in potential energy of the system? Interpret your result



14.a) The resistance of a wire is 20 Ω. What will be new resistance, if it is stretched uniformly 8 times its original length?

(or)

b) Obtain the condition for bridge balance in Wheatstone's bridge

15.a) Calculate the magnetic field at a point on the axial line of a bar magnet

(or)

b) Discuss Earth's magnetic field in detail

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