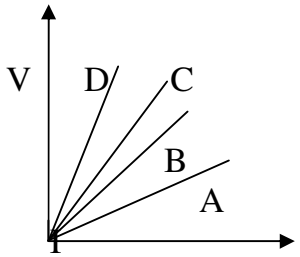
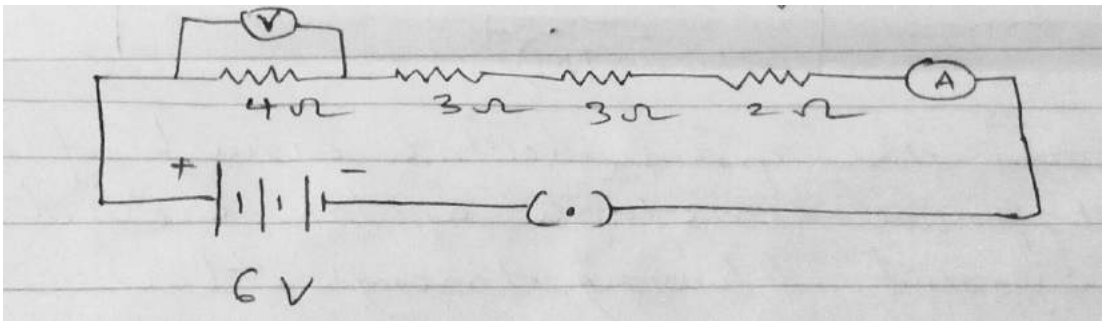
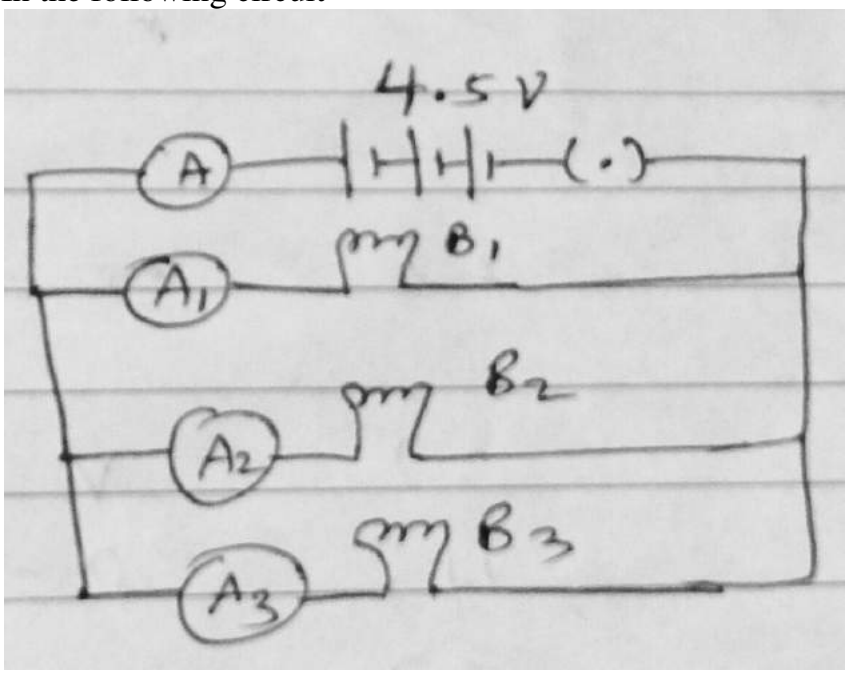
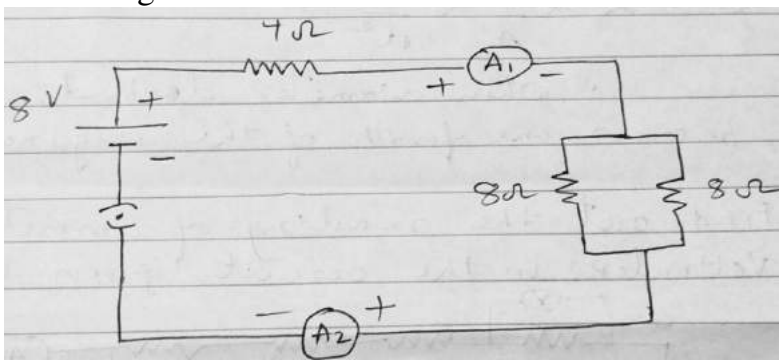
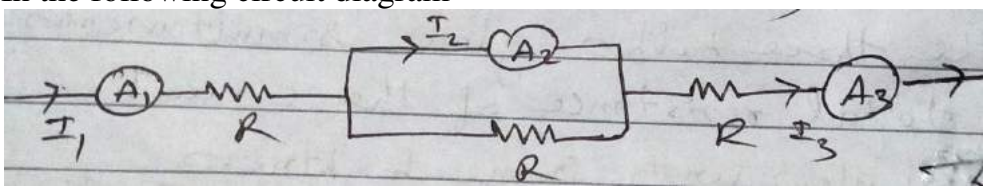
Goa Board Sample Question Bank.

Cognitive Domain: Application Type.

Level: Moderate to Difficult.

Q1	Magnification produced by a plane mirror is +1. What does this mean?	01
Q2	A convex lens of focal length 20 cm can produce a magnified virtual as well as real image. Is this a correct statement? If yes, where shall the object be placed in each case for obtaining these images?	02
Q3	Under what condition in an arrangement of two plane mirrors, incident ray and reflected ray will always be parallel to each other, whatever may be the angle of incidence. Show the same with the help of a diagram.	02
Q4	A wire of resistance 20Ω is bent to form a closed square. What is the resistance across a diagonal of the square?	02
Q5	How is the direction of electric current related to the direction of flow of electrons in a wire?	01
Q6	Calculate the current in a circuit if 500 coulomb charge passes through it in 10 minutes.	01
Q7	Name the physical quantity which is i) same ii) different in all the bulbs when three bulbs of a) same wattage are connected in series b) same wattage are connected in parallel c) different wattage are connected in series d) different wattage are connected in parallel.	04
Q8	Study the V – I graph for four conductors A, B, C and D having resistances R_A, R_B, R_C and R_D respectively and answer the following questions by giving proper justification.  i) Which one of these is the best conductor? ii) If all the conductors are of same lengthand of same material, which is the thickest? iii) If all the conductors are of same thickness and of same material, which is the longest? iv) If the dimensions of all the conductors are identical but their materials are different which one would you use as a) resistance wire b) connecting wire	04
Q9	Difficulty level of Q8 can be increased b changing the graph to I - V	04
	For the same graph (Q8) following MCQ's can be asked	
Q10	Which one of the following relations is true for these conductors * $R_A > R_B > R_C > R_D$ * $R_A < R_B < R_C < R_D$ * $R_A = R_B = R_C = R_D$ * $R_A = R_B > R_C > R_D$	01

Q11	If conductors C and D are connected in series and V – I graph is plotted for the combination, its slope would be * less than that of D * more than that of D * between C and D * less than that of A	01
Q12	If conductors A and B are connected in parallel and V – I graph is plotted for the combination, its slope would be * less than that of A * more than that of A * between A and B * more than that of D	01
Q13	In a circuit if two resistors of 10Ω and 20Ω are connected in series. Compare the current passing through two resistors.	01
Q14	Name the physical quantity which is same in all resistors when they are connected in series.	01
Q15	The resistance of a resistor is kept constant and the p.d. across its two ends is *decreased to half of its f*ormer value. State the change that will occur in the current through it.	01
Q16	The resistance of a resistor is kept constant and the p.d. across its two ends is *increased to two times* of its former value. State the change that will occur in the current through it.	01
Q17	A hot plate connected to a 220 V supply has two resistance coils A and B, each of 22 Ω resistance. Calculate the amount of electric current flowing when these coils are : i) used individually ii) connected in series iii) connected in parallel	03
Q18	Fuse of 3A, 5A and 10A are available. Calculate and select the fuse for operating electric iron of 1kw power at 220 V line.	02
Q19	A wire of length 'l' and radius 'r' has a resistance of 10 Ω. How would the resistance of the wire change when: i) only length of the wire is doubled? ii) only diameter of the wire is doubled? Justify your answer.	02
Q21	Find out the reading of ammeter and voltmeter in the circuit given below 	02

Q22	In the following circuit  i) What will happen to the glow of the other two bulbs if the bulb B_1 gets fused? ii) If the wattage of each bulb is 1.5w, how much reading will the ammeter A show when all the three bulbs glow simultaneously? iii) Find the total resistance of the circuit.	03
Q23	From the given electric circuit find out  i) effective resistance of the circuit. ii) current flowing through 4Ω resistance. iii) p.d. across 4Ω resistance. iv) power dissipated in 4Ω resistance. v) ratio of the current reading in A_1 and A_2	05
Q24	In the following circuit diagram  the relation between I_1,I_2 and I_3 is given by * $I_1 = I_2 = I_3$ * $I_1 > I_2 > I_3$ * $I_1 = I_3 > I_2$ * $I_1 = I_3 < I_2$	01