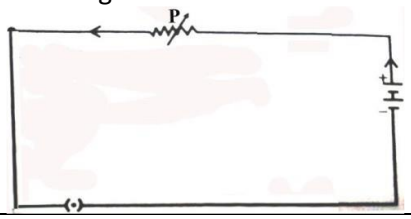
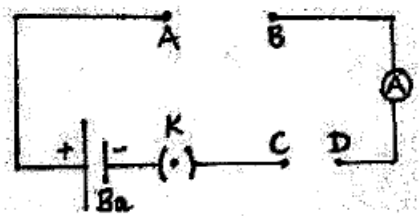
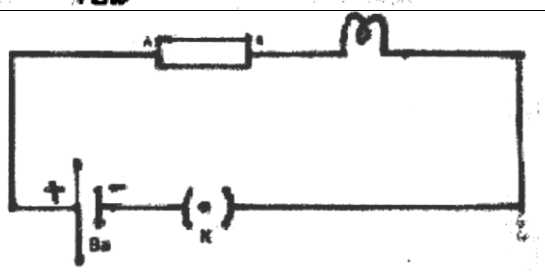
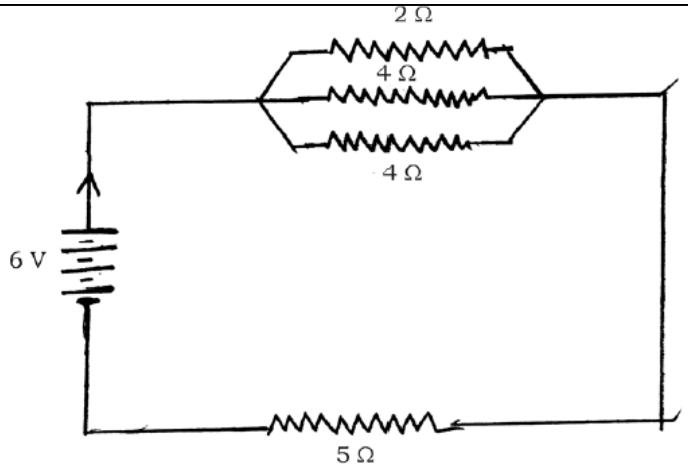
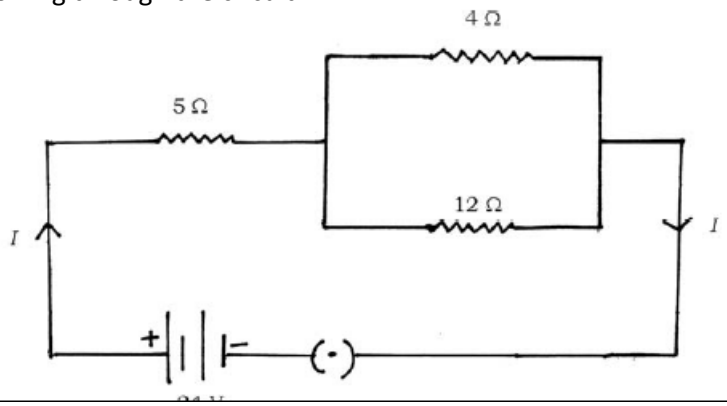
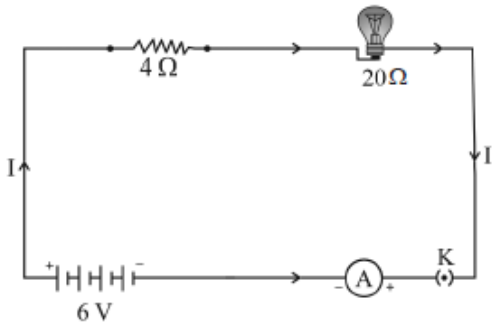
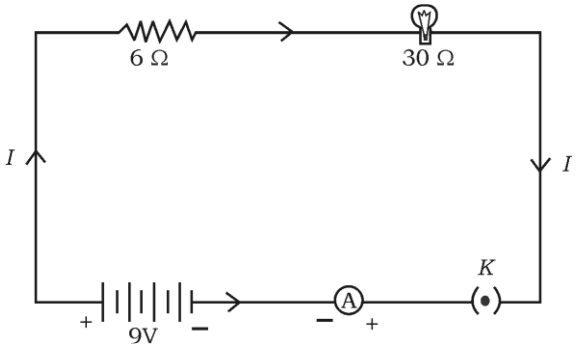
CHAPTER 12 – ELECTRICITY		
01.	The SI unit of electric current is (A) Ohm (B) Volt (C) Ampere (D) Watt	MQP1 - MCQ
02.	What is the resistance of a conductor? Mention the factors on which the resistance of a conductor depend. **OR** Mention the disadvantages of connecting electrical appliances in series in domestic wiring.	MQP1 – 2
03.	A potential difference of 220V is applied across a resistance of 440Ω in an electrical appliance. Calculate the current drawn and the heat energy produced in 20 seconds.	MQP1 – 2
04.	Draw the diagram of the electric circuit in which the resistors R1, R2, & R3 are connected in parallel including ammeter and voltmeter and mark the direction of current.	MQP1 – 2
05.	In the figure the device labelled as P is A) Ammeter B)Bulb C) Rheostat D) Voltmeter  	MQP2 – MCQ
06.	The resistance of a conductor is 27Ω. If it is cut into three equal parts and connected in parallel, then its total resistance is (A) 6 Ω (B) 3 Ω (C) 9 Ω (D) 27 Ω	A2019– MCQ
07.	Draw the diagram of an electric circuit in which the resistors R1 , R2 and R3 are connected in parallel including an ammeter and a voltmeter and mark the direction of the current.	A2019–2
08.	It is advantageous to connect electric devices in parallel instead of connecting them in series. Why? **OR** According to Joule's law of heating, mention the factors on which heat produced in a resistor depends. According to this law write the formula used to calculate the heat produced.	A2019–2
09.	An electric refrigerator rated 400 W is used for 8 hours a day. An electric iron box rated 750 W is used for 2 hours a day. Calculate the cost of using these appliances for 30 days, if the cost of 1 kWh is Rs. 3/–.	A2019–2
10.	(i) How does overload and short–circuit occur in an electric circuit? Explain. What is the function of fuse during this situation? (ii) Mention two properties of magnetic field lines.	A2019–4
11.	A piece of metallic wire of resistance R is cut into 3 equal parts. These parts are then connected in parallel. If the total resistance of this combination is R^{I} , then the value of R: R^{I} is	J2019 – MCQ
12.	A bulb is marked 220 V and 40 W. Calculate the current flowing through the bulb and it's resistance.	J2019 – 2
13.	Draw the diagram of a simple electric motor. Label the following parts: (i) Brushes (ii) Battery.	J2019 – 2
14.	(i) Define electric potential difference. How is ammeter connected in an electric circuit? (ii) Explain the application of heating effect of electric current in an electric bulb and the fuse used in an electric circuit. **OR** (i) State Ohm's law (ii) Explain the factors on which the resistance of a conductor depend.	J2019 – 4
15.	A heat producing device should be used in an electric circuit. This device should have A) high resistance and low melting point B) low resistance and high melting point	MQP2020– MCQ

	C) high resistance and high melting point. D) low resistance and low melting point	
16.	Observe the following table a) Reverses the direction of electric current — i) Galvanometer b) Safety device — ii) Commutator c) Detects the presence of electric current — iii) fuse The correct arrangement is A) a -iii b -I c-ii B) a -ii b -i c-iii C) a - ii, b - iii, c -i D) a – iii b -ii c - i	MQP2020–MCQ
17.	Define one volt (1V) potential difference.	MQP2020–1
18.	Draw the circuit diagram showing the combination of resistors R1, R2 and R3 in parallel including ammeter and voltmeter and mark the direction of current.	MQP2020–2
19.	There are two metallic wires of the same thickness made from iron and silver. IF the length of iron wire is 12cm, what should be the length of the silver wire which is equal to the resistance of iron wire? Resistivity of iron = $10x10^{-8}$ Ωm & resistivity of silver = $16x10^{-8}$Ωm.	MQP2020–4
20.	Complete this diagram by connecting two resistors R1 & R2 in series between A and B, also connecting two resistors R3 & R4 in parallel between C & D. 	MQP2020–1
21.	 In the above circuit, which device can be connected in place of AB to increase or decrease the brightness of the bulb? Give reason for your answer.	MQP2020–2
22.	Define ohm's law. Write any two factors on which the resistance of the conductor depend.	MQP202–2
23.	a) Explain any two practical applications of heating effect of electric current. b) An electric bulb is connected to a 220V generator. If the current drawn by the bulb is 0.5A, then calculate the power of the bulb.	MQP2020–4
24.	What is the SI unit of potential difference? Name the device used to measure the potential difference.	M2020 – 1
25.	The resistivity of manganese wire of length 1 m is $1{\cdot}84 \times 10^{-6}$ Ωm at 20°C. If the diameter of the wire is 3×10^{-4} m, what will be the resistance of the wire at that temperature?	M2020 – 2
26.	Observe the given circuit. Calculate the total resistance in the circuit and the total current flowing in the circuit.	M2020 – 2

		
27.	State Joule's law of heating. Explain the working of electric filament bulb. **OR** State Ohm's law. How ammeter and voltmeter should be connected in electric circuit? What is the use of these instruments, in the circuit?	M2020 – 3
28.	Observe the given circuit diagram. Calculate the total resistance and the total current flowing through the circuit. 	S2020 – 2
29.	What is the meaning of the statement "The potential difference between two points is 1 V"? Name the device used to measure potential difference. What is resistance of a conductor? What is electric power? Write three formulae used to find it.	S2020 – 4
30.	A device used to change the resistance in an electric circuit is A. ammeter B. rheostat C. galvanometer D. voltmeter	MQP2021– MCQ
31.	The resistance of a conductor does NOT depend on A. length of conductor B. area of cross section of conductor C. magnetic nature D. nature of the material	MQP2021– MCQ
32.	'WATT' is an SI unit of A. electric current B. electric charge C. electric potential difference D. electric power	MQP2021– MCQ
33.	Observe the given table. Good conductor of electricity among these material is **Material** / **Resistivity (Ωm)** K / 6.84×10^{-8} L / 1.62×10^{-8} M / 5.20×10^{-8} N / 2.63×10^{-8} A. K B. L C. N D. M	MQP2021– MCQ
34.	An electric lamp whose resistance is 20Ω and a conductor of 4Ω resistance are connected in series to a 6V battery as shown in figure. Then the total current flowing through the circuit is:	MQP2021– MCQ

	 A. 36AΩ B. 0.6A C. 4A D. 0.25A	
35.	An electric bulb is connected to a 220V generator. If the current flowing in the bulb is 0.50A. The power of the bulb is A. 44W B. 1100W C. 110W D. 220W	MQP2021–MCQ
36.	The function of ammeter in an electric circuit is, it A. reverses the direction of the current B. measures rate of electric current C. protects electrical appliances D. measures the potential difference	MQP2021–MCQ
37.	As the electrical resistivity of a substance increases A. resistance decreases B. conductivity increases C. melting point decreases D. resistance increases	MQP2021–MCQ
38.	The potential difference between the terminals of electric heater is 60V, when it draws a current of 4A from the source. The resistance of electric heater coil is A. 15Ω B. 240Ω C. 24Ω D. 64Ω	MQP2021–MCQ
39.	An electric lamp whose resistance is 30 ∧ and a conductor of 6 ∧ resistance are connected in series to 9V battery as shown in the figure. The total current flowing in the circuit is  (A) 4 A (B) 36 A (C) 0.25 A (D) 0.6 A	J2021–1
40.	The metal used in the filament of an electric bulb is (A) manganese (B) tungsten (C) nickel (D) chromium	J2021–1
41	A device used to change the resistance in the electric circuit is (A) voltmeter (B) ammeter (C) galvanometer (D) rheostat	J2021–1
42.	'Ohm' is the SI unit of (A) electric potential difference (B) resistance (C) electric current (D) electric charge	J2021–1
43.	In which material medium the speed of light is very high ? *Material medium* / *Refractive index* *P* / 1.52 *Q* / 1.44 *R* / 2.42 *S* / 1.33 (A) *Q* (B) *P* (C) *S* (D) *R*	J2021–1
44.	The SI unit of electric potential difference is (A) volt (B) ampere (C) ohm (D) coulomb	S2021–1

<table>
<tr><td>45.</td><td>The resistance of an electric heater coil is 110 Ω. Then electric current, that an electric heater draws from a 220 V source is:
(A) 0.5 A (B) 0.11 A (C) 2 A (D) 3 A</td><td>S2021–1</td></tr>
<tr><td>46.</td><td>A device that is connected in series in an electric circuit is
(A) voltmeter (B) bar magnet (C) turbine (D) ammeter</td><td>S2021–1</td></tr>
<tr><td>47.</td><td>Observe the following table :
<table><tr><th>Material</th><th>Resistivity (Ωm)</th></tr><tr><td>K</td><td>2.63×10^{-8}</td></tr><tr><td>L</td><td>5.20×10^{-8}</td></tr><tr><td>M</td><td>1.60×10^{-8}</td></tr><tr><td>N</td><td>6.84×10^{-8}</td></tr></table>The best conductor of electricity among these materials is
(A) N (B) M (C) K (D) L</td><td>S2021–1</td></tr>
<tr><td>48.</td><td>An electric motor takes 5A from a 220V electric source. The power of the motor is
A) 1100W B) 44W C) 225W D) 440W</td><td>MQP2022–MCQ</td></tr>
<tr><td>49.</td><td>What is an electric circuit?</td><td>MQP2022–1</td></tr>
<tr><td>50.</td><td>An electric lamp whose resistance is 40Ω and conductor of 8Ω resistance are connected in series to 12V battery in an electric circuit. Calculate the total resistance of the circuit and the current flowing through the circuit.</td><td>MQP2022–2</td></tr>
<tr><td>51.</td><td>What is electric potential difference? What is the SI unit of potential difference? Name the device used to measure the potential difference.</td><td>MQP2022–3</td></tr>
<tr><td>52.</td><td>The device used to produce electricity is
(A) Galvanometer (B) Electric generator (C) Ammeter (D) Electric motor.</td><td>A2022–1</td></tr>
<tr><td>53.</td><td>The correct formula that shows the relationship between potential difference, electric current and resistance in an electric circuit is
(A) $I = \frac{R}{V}$ (B) $I = VR$
(C) $V = \frac{I}{R}$ (D) $R = \frac{V}{I}$.</td><td>A2022–1</td></tr>
<tr><td>54.</td><td>Draw the schematic diagram of an electric circuit comprising of electric cell, electric bulb, ammeter and plug key.</td><td>A2022–2</td></tr>
<tr><td>55.</td><td>a) What are the advantages of connecting electrical devices in parallel in an electric circuit instead of connecting them in series ?
b) How are ammeter and voltmeter connected in an electric circuit ? What are their function ?</td><td>A2022–4</td></tr>
<tr><td>56.</td><td>The resistivity (Ωm) of four materials A, B, C and D are 6.84×10^{-8}, 1.62×10^{-8}, 5.20×10^{-8} and 2.63×10^{-8} respectively. Which of these materials has very less electric conductivity?
(A) Material B (B) Material C (C) Material A (D) Material D</td><td>MQP–2023–MCQ</td></tr>
<tr><td>57.</td><td>Draw the symbol diagram of two electric cells that are connected in series in an electric circuit.</td><td>MQP–2023–1</td></tr>
<tr><td>58.</td><td>a) Two resistors of resistance 5Ω and 20Ω are connected in parallel and connected to a 12V battery. Calculate the total resistance in the electric circuit and the total current flowing in this circuit.
b) 200 J of heat is produced in two seconds in a 8 Ω resistance. Find the potential difference across the resistor.</td><td>MQP–2023–4</td></tr>
<tr><td>59.</td><td>The device used to measure the rate of current in a circuit is
(A) Ammeter (B) Voltmeter (C) Galvanometer (D) Battery</td><td>A2023–MCQ</td></tr>
</table>

60.	Write the symbols of the following components used in an electric circuit. i) Rheostat ii) Wires crossing without joining	A2023–1
61.	State Ohm's law. On which factors does the resistance of a conductor depend ? Mention the SI unit of electric power. **OR** State Joule's law of heating. How is fuse connected in the circuits ? Name the metal used in the filament and the gas filled in electric bulb.	A2023–3
62.	The resistors R1 ,R2 and R3 have the values 10 Ω, 20 Ω and 60 Ω respectively, which have been parallelly connected to a battery of 24 V in an electric circuit. Then calculate the following : i) The current flowing through each resistor ii) The total current in the circuit iii) The total resistance of the circuit.	A2023–3
63.	Draw the symbol diagram of rheostat used in electric circuit.	J2023–1
64.	1000 J of heat is produced each 2 seconds in a 5 Ω resistor. Find the potential difference across the resistor. **OR** A wire of given material having length 'l' and area of cross–section 'A' has a resistance of '4 Ω'. Find the resistance of another wire of the same material having length l/2 and area of cross-section '2A'.	J2023–2
65.	a) A bread-toaster rated 350 W is used for 15 hours a day. An electric iron box rated 250 W is used for 5 hours a day. Calculate the cost of using these appliances for 30 days, if the cost of 1 kWh is Rs. 4. b) In which method the resistors R1 and R2 could be connected so that the equivalent resistance of that electric circuit becomes low ? What is the change in the value of current in the circuit by this type of connection ?	J2023–4