MCQs Related to the Article "13.1 ELECTRIC CURRENT"

1. One coulomb per second is equal to

(a) Joule (b) Volt (c) Ampere (d) Watt

2. Conventional current flow from

(a) From higher potential to lower potential (b) From lower potential to higher potential

(c) From lower potential to lower potential (d) None

3. In the metallic conductor the current is due to flow of _____

(a) Positron (b) Electrons (c) Proton (d) Neutrons

4. In liquids and gases, the current is due to the motion of :

(a) Negative charges (b) Positive charges (c) Neutral particles d) Both negative and positive charges

5. Charge carries in electrolytes are:

(a) Protons (b) electrons (c) holes (d) positive and negative ions

6. Dirft velocity of electrons in a conductor is:

(a) $10^{-2}\ ms^{-1}$ (b) $10^{-3}\ ms^{-1}$ (c) $10^{3}\ ms^{-1}$ (d) $10^{2}\ ms^{-1}$

7. A battery move a charge of 40 C around a circuit at constant rate in 20 s. The current will be:

(a) 2 A (b) 0.5 A (c) 80 A (d) 800 A

MCQ # 1: (c)	MCQ # 2: (a)	MCQ # 3: (b)	MCQ # 4: (d)	MCQ # 5: (d)	MCQ # 6: (b)	MCQ # 7: (a)

MCQs Related to the Article "13.2 SOURCES OF CURRENT"

1. In the thermocouple the heat energy is converted into

(a) Mechanical energy (b) Electric energy (c) Magnetic energy (d) None

2. An electric generator converts _____ into electrical energy:

(a) Heat energy (b) Electric energy (c) Magnetic energy (d) Mechanical Energy

MCQ # 1: (b)	MCQ # 2: (d)

MCQs Related to the Article "13.3 EFFECTS OF CURRENT"

1. The heating effect of current utilized in

(a) Iron (b) Tube light (c) Fan (d) Motor

2. The heat produced by passage of current through resistor (Joule's Law) is:

(a) $H = \frac{I}{Rt}$ (b) $H = IR^2t$ (c) $H = \frac{I^2}{Rt}$ (d) $H = I^2Rt$

3. Magnetic effect of current is utilized in:

(a) Heater (b) Iron (c) Electrolyte (d) Electric Motor

4. Current can be measured by using:

(a) Heating effect (b) Magnetic effect (c) Chemical effect (d) None of these

5. When electricity passes through the liquid, then process is called:

(a) Electro late (b) Electrolysis (c) Electro-fluid (d) None

6. The electrode connected with positive terminal of the battery is called:

(a) Anode (b) Cathode

7. Through an electrolyte, electric current is passed due to drift of

(a) Free electrons (b) Protons

(c) Free electrons and holes (d) Positive and negative ions

8. In electrolysis processes of $CuSO_4$, Cu is deposited on:

(a) Anode (b) Cathode

9. The process in which a thin layer of some expensive metal is deposited on the article of cheap metal is called

(a) Metal Depositing (b) Overlapping (c) Electroplating (d) Coating

MCQ # 1: (a)	MCQ # 2: (d)	MCQ # 3: (d)	MCQ # 4: (b)	MCQ # 5: (b)
MCQ # 6: (a)	MCQ # 7: (b)	MCQ # 8: (b)	MCQ # 9: (c)	

MCQs Related to the Article "13.4 OHM'S LAW"

1. The current flowing through a conductor is directly proportional to the applied potential difference across its ends provided that temperature remains constant is statement of:

(a) Boyle's Law (b) Charles's Law (c) Joule's Law (d) Ohm's Law

2. The VI-graph of Ohm's law is:

(a) Hyperbola (b) Ellipse (c) Parabola (d) Straight

3. Mathematical form of ohm's law is

(a) I = VR (b) I = V/R (c) I = R/V (d) R = IV

4. 1 Ohm is defined as:

(a) 1 (b) 1 (c) 1 (d) 1

5. A source of 10 volts is applied across a wire, the current is:

(a) 1 A (b) 2 A (c) 10 A (d) 15 A

6. Ohm's law is valid for only current flowing in

(a) Conductors (b) Transistors (c) Diodes (d) Electric Areas

7. For non-ohmic devices, the graph between V & I is:

(a) Straight Line (b) Not a Straight Line

8. The proportionality constant between current and potential difference is:

(a) ρ (b) V (c) C (d)

9. In series circuit the net resistance is

(a) Algebraic Sum of all resistance (b) Sum of reciprocals of all resistances in circuit

(c) Remain constant (d) None

10. A wire of resistance R is cut into two equal parts, its resistance becomes R/2. What happens to resistivity?

(a) Double (b) Half (c) Remains same (d) One forth

11. Equivalent resistance when two when two resistance are connected in parallel is given by:

(a) ——— (b) (c) ——— (d) ———

12. The potential difference between the head to tail of an electric eel is:

(a) 600 V (b) 700 V (c) 800 V (d) 900 V

MCQ # 1: (d)	**MCQ # 2: (d)**	**MCQ # 3: (b)**	**MCQ # 4: (a)**	**MCQ # 5: (b)**	**MCQ # 6: (a)**
MCQ # 7: (b)	**MCQ # 8: (d)**	**MCQ # 9: (a)**	**MCQ # 10: (c)**	**MCQ # 11: (a)**	**MCQ # 12: (a)**

MCQs Related to the Article "13.5 RESISTIVITY AND ITS DEPENDANCE ON TEMPERATURE"

1. The resistance offered by a cubic meter of a substance is called:

(a) Reactance (b) Conductance (c) Conductivity (d) Resistivity

2. The resistivity of a material in terms of its resistance R, cross-sectional area A and length L is:

(a) $\rho =$ — (b) $\rho =$ — (c) $\rho = RLA$ (d) —

3. The reciprocal of resistivity is called

(a) Resistance (b) Conduction (c) Conductivity (d) None

4. The SI unit of resistivity (specific resistance) is:

(a) Ω. m (b) $(\Omega.m)^{-1}$ (c) $\Omega.m^{-1}$ (d) None

5. The unit of conductivity is

(a) Ω. m (b) (c) $\Omega.m^{-1}$ (d) None

6. When temperature increases, the resistance of conductor:

(a) Increases (b) Decreases (c) Remains constant (d) Vanishes

7. If the length and diameter of conductor is double, the resistance is

(a) Remain same (b) Double (c) Half (d) Four times

8. A wire of uniform cross-section A and length L is cut into two equal parts. The resistance of each part becomes:

(a) Double (b) Half (c) 4 times (d) ¼ times

9. Specific resistance of a material depends upon:

(a) Length (b) Area (c) Temperature (d) Both a & b

10. Temperature coefficient of resistance is equal to:

(a) ——— (b) ——— (c) ——— (d) None of these

11. The fractional change in resistivity per Kelvin

(a) Co-efficient in resistance (b) Co-efficient of resistivity (c) Resistance

12. Temperature coefficient of resistivity is measured in:

(a) Ω K (b) Ωm (c) (d)

MCQ # 1: (d)	**MCQ # 2: (b)**	**MCQ # 3: (c)**	**MCQ # 4: (a)**	**MCQ # 5: (b)**	**MCQ # 6: (a)**
MCQ # 7: (c)	**MCQ # 8: (b)**	**MCQ # 9: (c)**	**MCQ # 10: (c)**	**MCQ # 11: (b)**	**MCQ # 12: (c)**

MCQs Related to the Article "13.6 COLOUR CODE FOR CARBON RESISTANCES"

1. In the carbon resistor, the value of resistance can be find out by their

(a) Wires (b) Terminals (c) Color Bands (d) Spots

2. The color code for carbon resistance usually consist of:

(a) 3 bands (b) 2 bands (c) 4 bands (d) 7 bands

3. The colors of strips on a certain carbon resistor from extreme left are yellow, black and red respectively. Its resistance is:

(a) (b) (c) (d)

4. If the tolerance color is gold then it value is

(a) $\pm$ 2% (b) $\pm$ 4% (c) (d)

5. If forth band on a carbon resistor is of silver color, then its tolerance is:

(a) $\pm$5% (b) $\pm$10% (c) $\pm$15% (d)

6. If forth band is missing on resistance, its tolerance is:

(a) $\pm$5% (b) $\pm$10% (c) (d)

7. The third band is written in the form of power of

(a) 2 (b) 6 (c) 8 (d) 10

8. The numerical value of black color is:

(a) 3 (b) 2 (c) 1 (d) 0

9. The color code for the color Grey is

(a) 7 (b) 8 (c) 9 (d) 5

10. A rheostat can be used as a

(a) Variable resistor (b) Potential divider (c) Both a and b (d) None of these

11. The wire used in Rheostat is made from

(a) Constantan (b) Nichrome (c) Manganin (d) Tungston

12. The number of terminals in a rheostat are:

(a) 2 (b) 3 (c) 4 (d) 5

13. Heat sensitive resistors are called

(a) Resistors (b) Capacitors (c) Thermisters (d) Inductors

14. Thermistor can be used for the accurate measurement of

(a) Voltage (b) Resistance (c) Temperature (d) Heat

15. Thermistors with high negative temperature coefficient of resistivity are used for accurate measurement of low temperature till:

(a) 1 K (b) 5 K (c) 8 K (d) 10 K

16. Thermistors are composed of:

(a) Semiconductors (b) Metals (c) Metal Oxides (d) Superconductors

MCQ # 1: (c)	**MCQ # 2: (c)**	**MCQ # 3: (a)**	**MCQ # 4: (c)**	**MCQ # 5: (b)**	**MCQ # 6: (d)**
MCQ # 7: (d)	**MCQ # 8: (d)**	**MCQ # 9: (b)**	**MCQ # 10: (c)**	**MCQ # 11: (c)**	**MCQ # 12: (b)**
MCQ # 13: (c)	**MCQ # 14: (c)**	**MCQ # 15: (d)**	**MCQ # 16: (c)**		

MCQs Related to the Article "13.7 ELECTRICAL POWER & POWER DISSIPATION IN RESISTORS"

1. The expression for determining the power dissipation in an electric circuit:

(a) (b) $P = I^2R$ (c) $P =$ — (d) All

2. A resistor is to be connected in series with a 12 V battery. Determine power dissipation:

(a) 0.5 W (b) 6 W (c) 12 W (d) 24 W

3. What is power expended in a resistor when a 5 A current is passing through it:

(a) 50 W (b) 80 W (c) 100 W (d) 500 W

4. A 1200W heater operate on a 120 V line for 1 hour. What is the current passing through it:

(a) 1 A (b) 5 A (c) 10 A (d) 120 A

MCQ # 1: (d)	**MCQ # 2: (b)**	**MCQ # 3: (d)**	**MCQ # 4: (c)**

MCQs Related to the Article"13.8 ELECTROMOTIVE FORCE AND POTENTIAL DIFFERENCE"

1. The S.I unit of emf is same as:

(a) Work (b) Energy (c) Power (d) Potential Difference

2. The terminal potential difference of a battery of internal resistance "r" and emf "ε" is:

(a) (b) (c) — (d) —

3. Electromotive force and potential difference, both are measured in:

(a) Coulomb (b) Ampere (c) Volt (d) Newton

4. The emf is always _____, even when no current is drawn through the battery of the cell.

(a) Zero (b) present (c) maximum (d) minimum

5. Which electric bulb has the least resistance?

(a) 60 watts (b) 100 watts (c) 200 watts (d) 500 watts

6. An electric heater 220V, 440W has a resistance

(a) 2 Ω (b) 110 Ω (c) 0.5 Ω (d) 20 Ω

3. The colors of strips on a certain carbon resistor from extreme left are yellow, black and red respectively. Its resistance is:

(a) (b) (c) (d)

4. If the tolerance color is gold then it value is

(a) $\pm$ 2% (b) $\pm$ 4% (c) (d)

5. If forth band on a carbon resistor is of silver color, then its tolerance is:

(a) $\pm$5% (b) $\pm$10% (c) $\pm$15% (d)

6. If forth band is missing on resistance, its tolerance is:

(a) $\pm$5% (b) $\pm$10% (c) (d)

7. The third band is written in the form of power of

(a) 2 (b) 6 (c) 8 (d) 10

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MCQ # 1: (c)	**MCQ # 2: (c)**	**MCQ # 3: (a)**	**MCQ # 4: (c)**	**MCQ # 5: (b)**	**MCQ # 6: (d)**
MCQ # 7: (d)	**MCQ # 8: (d)**	**MCQ # 9: (b)**	**MCQ # 10: (c)**	**MCQ # 11: (c)**	**MCQ # 12: (b)**
MCQ # 13: (c)	**MCQ # 14: (c)**	**MCQ # 15: (d)**	**MCQ # 16: (c)**		

MCQs Related to the Article "13.7 ELECTRICAL POWER & POWER DISSIPATION IN RESISTORS"

1. The expression for determining the power dissipation in an electric circuit:

(a) $P = VI$ (b) $P = I^2R$ (c) — (d) All

2. A resistor is to be connected in series with a 12 V battery. Determine power dissipation:

(a) 0.5 W (b) 6 W (c) 12 W (d) 24 W

3. What is power expended in a resistor when a 5 A current is passing through it:

(a) 50 W (b) 80 W (c) 100 W (d) 500 W

4. A 1200W heater operate on a 120 V line for 1 hour. What is the current passing through it:

(a) 1 A (b) 5 A (c) 10 A (d) 120 A

MCQ # 1: (d)	**MCQ # 2: (b)**	**MCQ # 3: (d)**	**MCQ # 4: (c)**

MCQs Related to the Article"13.8 ELECTROMOTIVE FORCE AND POTENTIAL DIFFERENCE"

1. The S.I unit of emf is same as:

(a) Work (b) Energy (c) Power (d) Potential Difference

2. The terminal potential difference of a battery of internal resistance "r" and emf "ε" is:

(a) (b) (c) — (d) —

3. Electromotive force and potential difference, both are measured in:

(a) Coulomb (b) Ampere (c) Volt (d) Newton

4. The emf is always _____, even when no current is drawn through the battery of the cell.

(a) Zero (b) present (c) maximum (d) minimum

5. Which electric bulb has the least resistance?

(a) 60 watts (b) 100 watts (c) 200 watts (d) 500 watts

6. An electric heater 220V, 440W has a resistance

(a) 2 Ω (b) 110 Ω (c) 0.5 Ω (d) 20 Ω

7. Power out is given by:

(a) $\frac{E^2R}{(R+r)^2}$ (b) $\frac{E^2R}{(R+r)+4Rr}$ (c) I^2R (d) All of these

8. The maximum power delivered by battery is:

(a) $P_{max}=\frac{E^2}{4r}$ (b) $P_{max}=4rE^2$ (c) $P_{max}=VIT$ (d) $Unlimited$

9. When the internal resistance r of a source is equal to the load resistance R, the power output is:

(a) $\frac{E^2}{4R}$ (b) $4rE^2$ (c) VIT (d) $Unlimited$

10. If a resistor of resistance R is connected across a battery of internal resistance r, then the output power will be maximum when:

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

MCQ # 1: (d)	MCQ # 2: (b)	MCQ # 3: (c)	MCQ # 4: (b)	MCQ # 5: (d)
MCQ # 6: (c)	MCQ # 7: (b)	MCQ # 8: (a)	MCQ # 9: (a)	MCQ # 10: (b)

MCQs Related to the Article "13.9 KIRCHHOFF'S RULES"

1. Kirchhoff's first rule is:

(a) $\sum V=0$ (b) $\sum R=0$ (c) $\sum I=0$ (d) $\sum T=0$

2. Kirchhoff's first rule is based on conservation of:

(a) Energy (b) Voltage (c) Charge (d) Mass

3. Net current arriving a junction point in electric circuit is equal to the current leaving that point is known as:

(a) Ampere's Law (b) Kirchhoff's 1st Law (c) Ohm's Law (d) Kirchhoff's 2nd Law

4. Kirchhoff's first rule is also known as:

(a) Kirchhoff's Point Rule (b) Kirchhoff's Rule for Static Charges
(c) Kirchhoff's Loop Rule (d) Kirchhoff's Rule for Point Charges

5. The algebraic sum of all the current at junction is zero, is Kirchhoff's

(a) 1st law (b) 2nd law (c) 3rd law (d) 4th law

6. Kirchhoff's second rule is based on conservation of:

(a) Energy (b) Voltage (c) Charge (d) Mass

7. The algebraic sum of voltages changes around a closed circuit or loop is zero, is Kirchhoff's

(a) 1st law (b) 2nd law (c) 3rd law (d) 4th law

8. Kirchhoff's second rule is also known as:

(a) Kirchhoff's Loop Rule (b) Kirchhoff's Rule for Static Charges
(c) Kirchhoff's Point Rule (d) Kirchhoff's Rule for Point Charges

9. A complex electric circuit consisting of resistors can be solved by:

(a) Joule's Law (b) Coulomb's Law (c) Kirchhoff's Law (d) Faraday's Law

MCQ # 1: (c)	MCQ # 2: (c)	MCQ # 3: (b)	MCQ # 4: (a)	MCQ # 5: (a)
MCQ # 6: (a)	MCQ # 7: (b)	MCQ # 8: (a)	MCQ # 9: (c)	

MCQs Related to the Article "13.10 WHEATSTONE BRIDGE"

1. An instrument for accurately determining the value of an unknown resistance:

(a) Galvanometer (b) Voltmeter (c) Ammeter (d) Wheatstone Bridge

2. A Wheatstone bridge consists of:

(a) 2 Resistors (b) 4 Resistors (c) 2 Diodes (d) 4 Diodes

3. The condition for balanced Wheatstone Bridge is:

(a) $\frac{R_1}{R_2}=\frac{R_3}{R_4}$ (b) $\frac{R_3}{R_2}=\frac{R_1}{R_4}$ (c) $\frac{R_1}{R_3}=\frac{R_4}{R_3}$ (d) $\frac{R_1}{R_4}=\frac{R_2}{R_3}$

MCQ # 1: (d)	MCQ # 2: (b)	MCQ # 3: (a)

MCQs Related to the Article "13.11 POTENTIOMETER"

1. An ideal voltmeter would have an infinite

(a) Current (b) Voltage (c) Resistance (d) None of these

2. Which of the following is not accurate measuring device?

(a) Digital Multimeter (b) CRO (c) Potentiometer (d) Voltmeter

3. An accurate measurement of emf of a cell is made by

(a) A voltmeter (b) An ammeter (c) A potentiometer (d) All of them

4. The emf of two cells can be compared by

(a) AVO meter (b) Voltmeter (c) Potentiometer (d) Galvanometer

5. The ratio of emf of two cells $\varepsilon_1/\varepsilon_2$, is equal to

(a) l_1/l_2 (b) 1 : 2 (c) l_2/l_1 (d) 2 : 1

MCQ # 1: (c)	MCQ # 2: (d)	MCQ # 3: (c)	MCQ # 4: (c)	MCQ # 5: (a)