CHAPTER = 10 DC CIRCUIT
MULTIPLE CHOICE QUESTIONS (BOOK XI)

1 Kirchhoff slaws are useful in determining:
a)current flowing in a circuit
b) emf and voltage drops in a circuit
c) power in a circuit
d) only emf in a circuit

2. The resistance of a superconductor is:
a) finite
b) infinite
c) changes with every conductor
d) zero

3 Reciprocal of resistance is called:
a) conductance
b) resistivity
c) resonance
d) capacitance

4 The graphical representation of Ohms law is:
a) parabola
b) hyperbola
c) ellipse
d) straight line

5 A potential difference is applied across the ends of a wire. If the potential difference is doubled, then the drift velocity of free electrons will:
a) be quadrupled
b) be doubled
c) be halved
d) remain unchanged

6. Internal resistance is the resistance offered by:
a) Capacitor
b) resistor
c) Conductor
d) source of emf

7 Power dissipation in a resistor can be calculated using which formula:
a) $P = V^2 / R$
b) $P = I^2 \times R$
c) $P = V \times I$
d) $P = R / (V \times I)$

8 What is a potentiometer primarily used for?
a) Measuring electric current
b) Measuring electric charge
c) Measuring potential difference (voltage)
d) Measuring electric resistance

9 A heat-sensitive device whose resistivity changes with the change in temperature is called:
a) conductor
b) resistor
c) thermistor
d) thermometer

10 A wire of uniform area of cross-section A length Land resistance R is cut into two parts. The resistivity of each part:
a) Becomes zero
b) is halved
c) Is doubled
d) remains same

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EXAMS PRACTICE MULTIPLE CHOICE QUESTIONS

1. The EMF of three cells each of 2 volts, in parallel will be:
   a) 6V b) 8V
   c) 2V d) zero V
2. The electrical energy dissipated as heat in a resistor is given by
   a) I^2R **b) $I^2R\ t$**
   c) V^2R d) $V^2R\ t$
3. A piece of wire of length "L" and an area of cross-section "A" has a resistance "R". Another piece of wire of the same material and the same length but twice the area of cross-section is connected end-to-end with the previous wire. The effective resistance is:
   a) R b) 2 R
   c) 1/3 R **d) 1/2 R**
4. The resistances of 2 ohms, 5 ohms, 7 ohms and 9 ohms are connected in parallel. If the potential difference across the 5 ohm resistance is 5 V, the potential difference across 9 ohm resistance will be:
   a) 9V **b) 5V**
   c) 2.5V d) 1.5V
5. How much current is produced by a voltage of 18 kV across a 15 kΩ resistance?
   a) 1.2 A b) 12 A
   c) 120 mA d) 12 mA
6. What is the approximate filament resistance of a light bulb if it operates from a 110 V source and 0.6 A of current is flowing?
   a) 183 Ω b) 18.3 Ω
   c) 66 Ω d) 6.6 Ω
7. One-Kilo-Watt-Hour is equal to
   a) $3.6x10^5$ J b) $360x10^6$ J
   c) $3.6x10^4$ J **d) $36x10^5$ J**
8. If the wire of a uniform area of cross section is cut into two equal parts, the resistivity of each part will be:
   a) halved b) doubled
   c) remains the same d) none of these
9. The power dissipated by a resistance is given by
   a) P=VR **b) $P=V^2/R$**
   c) $P=IR^2$ d) P=IR
10. The commercial unit of electrical energy is called:
    a) Joule a) Kilowatt
    c) Kilowatt hour d) mega watt

.11. Heat generated by a 100 Watt bulb in one hour is:
    a) 36J b) 3600J
    c) 6000J **d) 360000J**

12. The reciprocal of resistivity is called,
    a) permittivity b) permeability

c) polarizability **d) conductivity**

13. The SI unit of resistivity
a) ohm b) coulomb
c) volt **d) ohm x metre**

14. The EMF of three cells each of 2 volts, in series will be:
a) 6V b) 8V
c) 2V d) zero V

15. A resistor is connected across a 50 V source. What is the current in the resistor if the color code is red, green and black?
a) 2 m A **b) 2.0 A**
c) 5 mA d) 5 A

16. Ohm's law is obeyed in:
a) an electric bulb b) thermistor
c) a metallic conductor d) all of the above

17. A resistance carries a current one ampere. The power dissipated is **'P'**. The power dissipated if the same resistance carries the current 3I is:
a) P b) 3P
c) P/3 **d) 9P**

18. The temperature coefficient of resistance of the semi conductor is:
a) positive **b) negative**
a) Zero d) none of these

19. The rate of transfer of electric the charge through a circuit is called
a) Resistance **b) Current**
c) potential difference d) Energy

20. The terminal potential difference of a battery is equal to its emf. When its internal resistance is:
a) Zero b) very high
c) very low d) none of the above

21 What is the approximate resistance of a rheostat if the voltage source is 18 V and the current is 220 mA?
a) 8.2 k Ω b) 820 Ω
c) 8.2 Ω d) 82 Ω

22 A junction or a point where two (or more) network elements intersect is called as:
a) Node b) Branch
c) Loop d) Mesh

23 What is Kirchhoff's first law?
a) Kirchhoff's Law of Current b) Kirchhoff's Voltage Law
b) Kirchhoff's Loop Rule d) Kirchhoff's Impedance

24 Which is the extension for 'Conservation of Charge'?
a) Kirchhoff's Law of Current b) Kirchhoff's Voltage Law
b) Kirchhoff's Loop Rule c) Kirchhoff's Impedance

25 If a circuit consists of four nodes. How many equations are required as per node analysis?
a) Two **b) Three**
c) Four d) Five