**ELECTRICAL CIRCUITS AND NETWORK THEORY**

**1. When electric charges move through electrical conductor there is a production of**

1. electric current
2. electrical charge
3. electric cell
4. electric circuit **ANS: A**

**2. Measure of rate of flow of electric charges through an electrical conductor is known as**

1. electric current
2. electrical charges
3. electric cell
4. electric circuit

**ANS: A**

**3. If electrical wires and appliances are overheated due to high electric current they can cause**

1. fires
2. burns
3. both a and b
4. freezing **ANS: C**

**4.** **Do not use appliances if they are**

1. damaged
2. exposed wires
3. both a and b
4. working properly

**ANS: C**

**5. A component which is used to close or break a circuit is**

1. bulb
2. switch
3. wire
4. electric cell

**ANS: B**

**6. A diagram which is drawn using symbols and represents electrical components is called**

1. circuit diagram
2. current diagram
3. charges diagram
4. electric diagram

**ANS: A**

**7.** **A short thin piece of wire which is heated up and melts while flowing electric current is called**

1. circuit
2. fuse
3. cell
4. resistor

ANS: **B**

**8.**  **In a parallel circuit current flowing through each branch from source is**

1. greater
2. lesser
3. equal
4. unequal **ANS: B**

**9**. **Component which are provided for resistance are called**

1. heat
2. energy
3. product
4. resistor **ANS: D**

**10.** **A circuit which splits into two or more branches is called**

1. series circuit
2. parallel circuit
3. open circuit
4. close circuit **ANS: B**

**11.** **Two or more cells when connected in series makes a**

1. battery
2. circuit
3. terminal
4. resistor **ANS: A**

**12.** **Gadgets, Devices and machines in modern world use energy that is**

1. electrical
2. magnetic
3. heat
4. chemical **ANS: A**

**13.** **When an electric current flows in a continuous path within a circuit it is called**

1. close circuit
2. open circuit
3. switch
4. blocked circuit **ANS: A**

**14.** **An electric component which makes use of a simple electric circuit to work is an electric**

1. torch
2. microwave oven
3. air conditioner
4. generator **ANS: A**

**15. Positive terminal inside a cell is made of**

1. zinc case
2. graphite rod
3. carbon
4. manganese **ANS: B**

**16. SI unit for electric current is**

1. Joule
2. Watt
3. Volt
4. Ampere

ANS: **D**

**17.** **Luigi Galvani discovered effect of electricity on legs of**

1. lizard
2. frog
3. human
4. horse

ANS: **B**

**18.** **Source of energy involves**

1. electric cell
2. battery
3. both a and b
4. switches

ANS: **C**

**19. A circuit which connects an electric source to its components on after another to form a single loop**

1. series circuit
2. parallel circuit
3. open circuit
4. close circuit

ANS: **A**

**20.** **To control electric current in a circuit there is a use of**

1. resistor
2. insulator
3. conductor
4. wire

ANS: **A**

**21. A positive terminal and a negative terminal are present on a**

1. cell
2. battery
3. circuit
4. all of them

**ANS:** **B**

**22.** **If more resistors are added in a series circuit resistance will be**

1. increased
2. decreased
3. equal
4. constant

ANS: **A**

**23.** **If a high current pass through someone there will be a**

1. electric circuit
2. electric current
3. electric energy
4. electric shock

ANS: **D**

**24. Instruments which is used to measure electric current is called**

1. Ammeter
2. cell
3. battery
4. speed o meter

ANS: **A**

**25.** **Resistors of variable resistors can be changed hence they are called**

1. ammeter
2. rheostat
3. fixed resistor
4. variable resistor

ANS: **B**

**26. In a parallel circuit resistance decrease with a increase in a number of**

1. resistors
2. bulbs
3. circuit
4. battery

ANS: **A**

**27.** **In a lighted bulb there is a flow of electrons in**

1. filament
2. socket
3. glass
4. holder

ANS: **A**

**28.** **Path along which electric current flows is called**

1. electric current
2. electrical charges
3. electric cell
4. electric circuit

ANS: **D**

**29.** **A** **measure of capacity of an electrical component resist or opposes current flow is called**

1. resistance
2. circuit
3. ammeter
4. current

ANS: **A**

**30. Chemical reactions which take place inside a cell provides**

1. heat
2. energy
3. product
4. resistor

ANS: **B**

**31.   Kirchhoff s current law states that**   
 (a) net current flow at the junction is positive  
 (b) Hebraic sum of the currents meeting at the junction is zero  
 (c) no current can leave the junction without some current entering it.  
 (d) total sum of currents meeting at the junction is zero **Ans**: **B**

**32. According to Kirchhoffs voltage law, the algebraic sum of all IR drops and e.m.fs. in any closed loop of a network is always**  
 (a) negative (b) positive

(c) determined by battery e.m.fs. (d) zero **Ans**: **D**

**33. Kirchhoffs current law is applicable to only** (a) junction in a network (b) closed loops in a network  
 (c) electric circuits (d) electronic circuits **Ans**: **A**  
  
**34. Kirchhoff’s voltage law is related to** (a) junction currents (b) battery e.m.fs.    
 (c)IR drops (d) both (b) and (c) **Ans**: **D**  
  
**35. Superposition theorem can be applied only to circuits having** (a) resistive elements (b) passive elements  
 (c) non-linear elements (d) linear bilateral elements **Ans**: **D**  
  
**36. The concept on which Superposition theorem is based is**  
 (a) reciprocity (b) duality

(c) non-linearity     (d) linearity **Ans**: **D**  
  
**37. Thevenin resistance Rth is found** (a) by removing voltage sources along with their internal resistances  
 (b) by short-circuiting the given two terminals  
 (c) between any two 'open' terminals  
 (d) between same open terminals as for Etk **Ans**: **D**  
  
**38. An ideal voltage source should have**  
 (a) large value of e.m.f. (b) small value of e.m.f.  
 (c) zero source resistance (d) infinite source resistance **Ans**: **C**  
  
**39. For a voltage source**  
 (a) terminal voltage is always lower than source e.m.f.

(b) terminal voltage cannot be higher than source e.m.f.  
 (c) the source e.m.f. and terminal voltage are equal

(d) None of the above **Ans**: **B**

**40. To determine the polarity of the voltage drop across a resistor, it is necessary to know** (a) value of current through the resistor (b) direction of current through the resistor  
 (c) value of resistor (d) e.m.fs. in the circuit **Ans**: **B**

**41. "Maximum power output is obtained from a network when the load resistance is equal to the output resistance of the network as seen from the terminals of the load". The above statement is associated with**  
 (a)Millman's theorem (b)Thevenin's theorem  
 (c) Superposition theorem (d) Maximum power transfer theorem **Ans**: **D**  
  
**42. Between the branch voltages of a loop the Kirchhoff s voltage law imposes**  
 (a) non-linear constraints (b) linear constraints  
 (c) no constraints (d) none of the above **Ans**: **B**  
**43. "In any linear bilateral network, if a source of e.m.f. E in any branch produces a current I in any other branch, then same e.m.f. acting in the second branch would produce the same current / in the first branch". The above statement is associated with** (a) compensation theorem (b) superposition theorem  
 (c) reciprocity theorem (d) none of the above **Ans**: **C**  
  
**44. Which of the following is non-linear circuit parameter ?**  
 (a)Inductance       (b) Condenser

(c) Wire wound resistor (d) Transistor **Ans**: **A**  
  
**45. A capacitor is generally a**  
 (a) bilateral and active component  
 (b) active, passive, linear and nonlinear component  
 (c) linear and bilateral component  
 (d) non-linear and active component **Ans**: **C**  
**46. A network which contains one or more than one source of e.m.f. is known as** (a) linear network (b) non-linear network  
 (c) passive network (d) active network **Ans**: **C**

**47. Kirchhoff s law is applicable to**  
 (a) passive networks only (b) a.c. circuits only  
 (c) d.c. circuits only (d) both a.c. as well d.c. circuits **Ans**: **D**

**48. Kirchhoff s law is not applicable to circuits with** (a) lumped parameters (b) passive elements  
 (c) distributed parameters (d) non-linear resistances **Ans**: **C**  
  
**49. Kirchhoff s voltage law applies to circuits with** (a) nonlinear elements only (b) linear elements only  
 (c) linear, non-linear, active and passive elements  
 (d) linear, non-linear, active, passive, time varying as wells as time-in-variant elements

**Ans**: **D**

**50. The resistance LM will be** (a) 6.66 Q (b) 12 Q

(c) 18Q (d) 20Q  
 **Ans**: **A**