

## CHAPTER-1

# CONDUCTING MATERIALS

1. *What is the main effect of temperature on conducting materials.*
2. *What is ACSR ?*
3. *What is superconductivity and its application?*
4. *What is Brass and Bronze?*
5. *What is Tungsten and its use?*
6. *Why copper and aluminium are used as current carrying conductor in overhead lines, compare and write their other applications.*
7. *Explain the effect of temperature on resistivity?*
8. *What is resistivity?*
9. *Write the two reasons for using copper in flexible wire?*
10. *What is the purpose of annealing?*
11. *Write uses of low resistivity material?*
12. *Explain properties of high resistive material.*
13. *Explain the properties and uses of platinum as conducting material.*
14. *Write two advantages of aluminium over copper.*
15. *Write the uses of platinum as conducting material*
16. *What is cunife?*
17. *Write a short note on A.C.S.R. conductor*
18. *Write a short notes on carbon as an electric material*
19. *Explain properties of high resistive material*
20. *Write the properties and uses of tungsten?*
21. *Write a short note on superconductivity?*
22. *Write two disadvantages of aluminum over copper?*
23. *Write the uses of silver as conductivity material.*



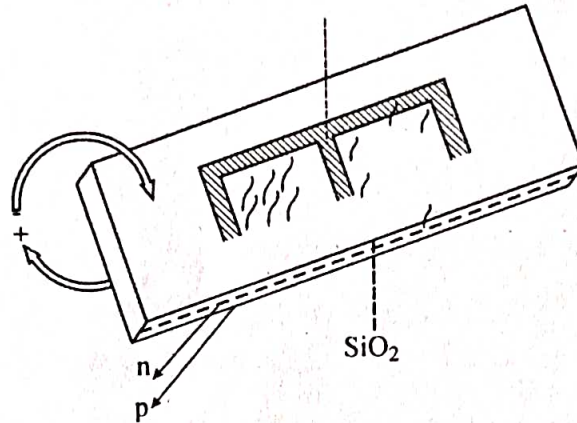
24. *Write application of superconducting material.*
25. *Write the uses of aluminium?*
26. *What are the advantages of alloying silicon of steel?*
27. *Write the application for super conducting material.*
28. *Write a short note on steel?*
29. *Explain the properties of copper?*
30. *What is a stranded conductor?*
31. *Write the uses of mercury as a conducting material?*
32. *Compare properties of steel and other conducting material.*
33. *Why is copper used in flexible wire?*

## CHAPTER-2

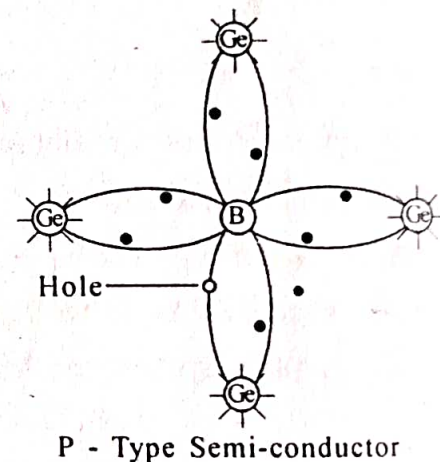
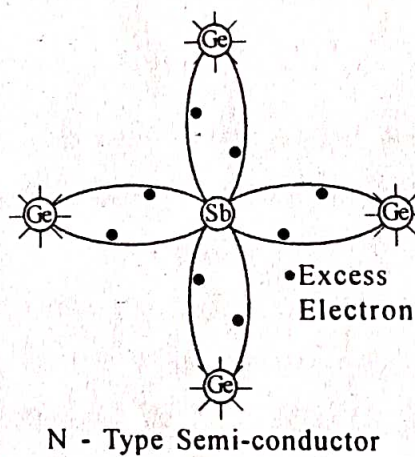
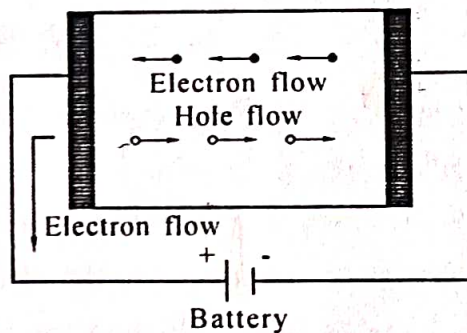
### SEMI CONDUCTING MATERIALS



1. Write the uses of varistors?
2. Write names of five numbers of semiconducting material and its use.
3. What is solar cell?



4. What do you mean by intrinsic and extrinsic semiconductors? Explain N-type and P-type materials?

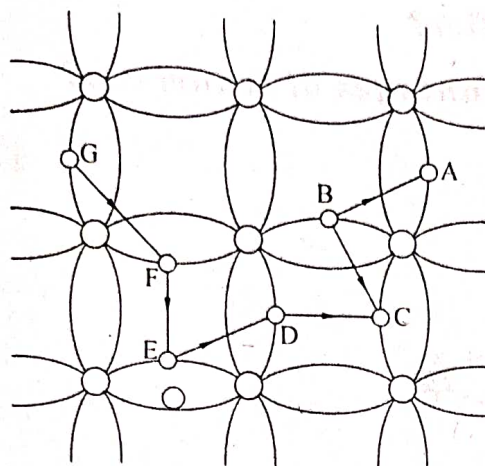


5. What is semiconductor?
6. What are the uses of varister?
7. Write a short note on energy band in solid?
8. Write a short note on germanium rectifier?
9. Explain function of intrinsic semiconductor?
10. Explain classify semiconductors?
11. What is thermister?

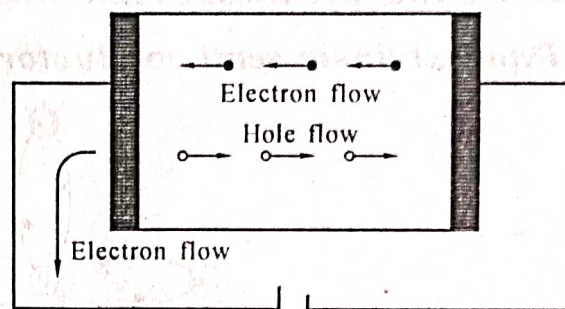
12. Explain the energy band diagram of a conductor?

13. Write a short note on silicon rectifier?

14. Explain conduction in intrinsic semiconductor?



Formation of Holes

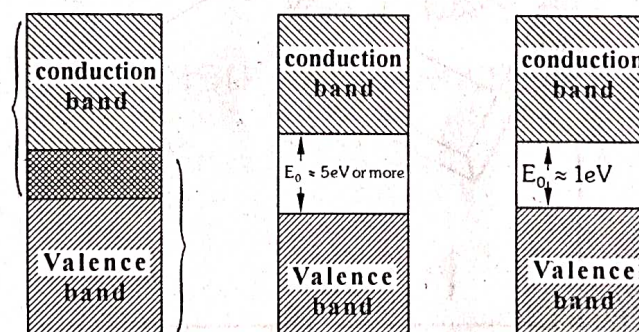


Battery  
Conduction of current in an  
Intrinsic Semi conductor

15. What is doping?

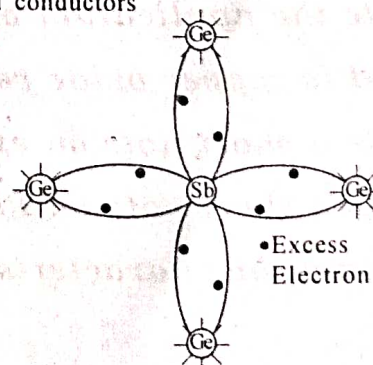
16. What are the uses of transistor?

17. Explain the energy band diagram of an insulating material?



Energy - Band Diagram for the three types of materials (a)  
Metals (conductors), (b) Insulators, (c) Semi conductors

18. Explain N-type extrinsic conductor?



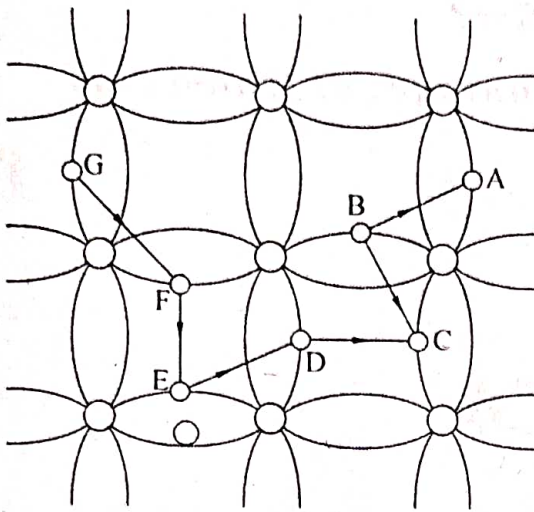
N - Type Semi-conductor



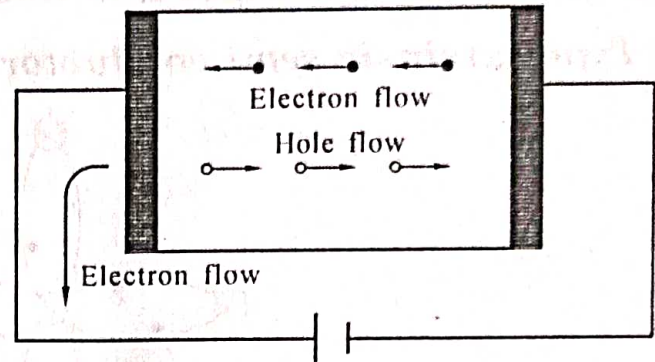
12. Explain the energy band diagram of a conductor?

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Formation of Holes

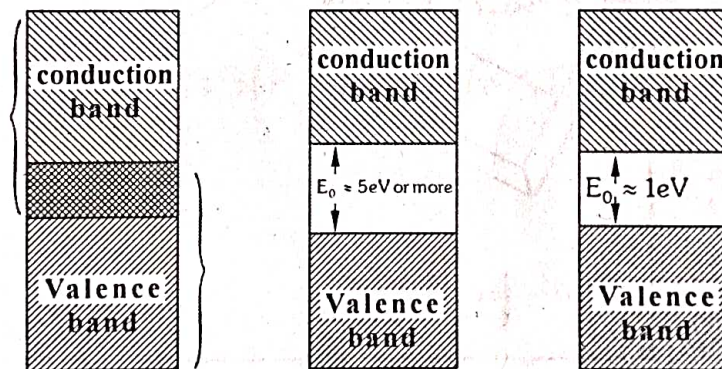


Conduction of current in an Intrinsic Semi conductor

15. What is doping?

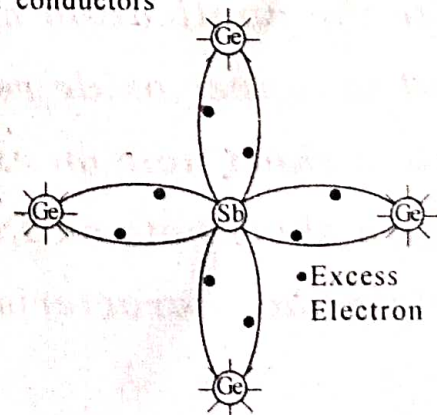
16. What are the uses of transistor?

17. Explain the energy band diagram of an insulating material?



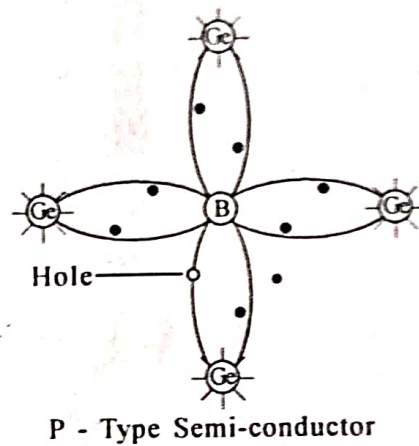
Energy - Band Diagram for the three types of materials (a) Metals (conductors), (b) Insulators, (c) Semi conductors

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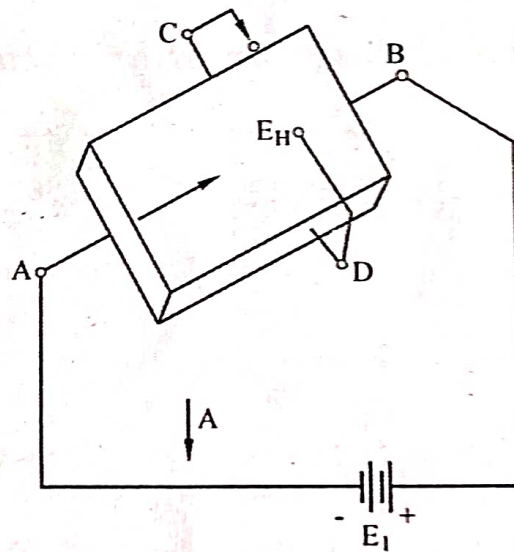


N - Type Semi-conductor

19. Write a short note on copper oxide rectifier?
20. Name the element used as semi conductor?
21. Write two applications of photovoltaic cell?
22. Write a short note on selenium rectifier?
23. What are the advantages and disadvantages of transistor?
24. P - Type extrinsic semi conductor



25. Explain hall effect of generator.



26. Write the application of selenium rectifier?
27. What is copper oxide rectifier?
28. Write a short note on extrinsic semiconductor?
29. Write a short note on Photoconductive cell?
30. Explain the characteristics and uses of a transistor?



## CHAPTER-3

### INSULATING MATERIALS

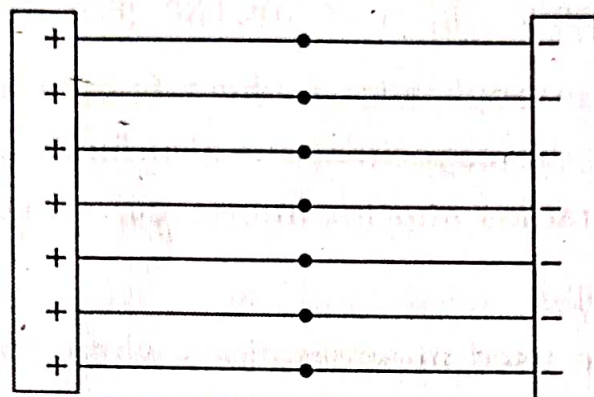
1. *What is the effect of porosity?*
2. *Classification insulating materials on the basis of physical and chemical structures?*
3. *Glass as insulating material and its use?*
4. *Impregnated paper, feature and application?*
5. *What are the types of insulation resistance?*
6. *What are the properties of SBR?*
7. *Write the important application of insulating material?*
8. *Explain mica as an insulating material.*
9. *Define permittivity*
10. *Write the uses of glass as an insulator?*
11. *Write the application of asbestos as insulating material.*
12. *Explain the use of ceramic and write its properties*
13. *What are the physical properties of insulation material?*
14. *What is piezo electric ceramic transducer element?*
15. *What is a class insulating material?*
16. *Write the application of wax as insulating material.*
17. *Classify insulating material*
18. *What is effect of moisture in insulating material?*
19. *Explain the reasons for impregnating electric motor winding?*
20. *Write a short note on insulation resistance?*



## CHAPTER-4

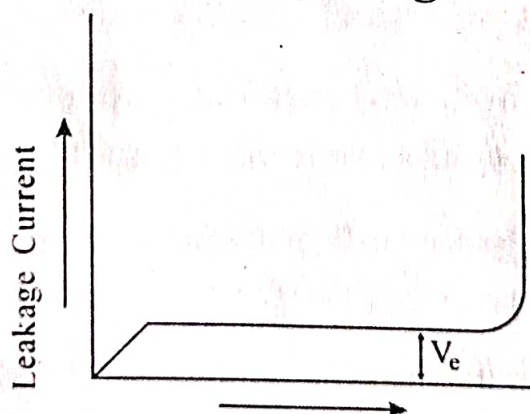
# DIELECTRIC MATERIALS

1. Define dielectric loss?
2. What is permittivity?
3. Write short notes on polarization?



Electric field existing between two charged plates

4. Define a dielectric material.
5. Write a short note on dielectric constant?
6. What is dielectric flux density?
7. What is polarization?
8. Explain dielectric loss?
9. What is ionization by collision?
10. Explain leakage current through a gaseous dielectric



Leakage current through a Gaseous Dielectric as a function of Applied voltage

11. What is the effect of temperature on solid dielectric?
12. Explain the application of dielectric?



## CHAPTER-5

### MAGNETIC MATERIALS

1. *What is the major cause of hum in transformers and chokes?*
2. *Define Hysteresis?*

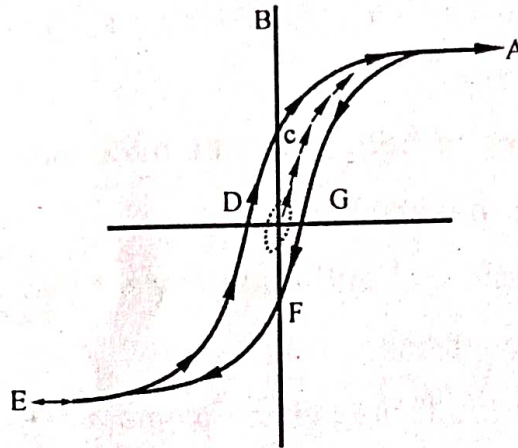
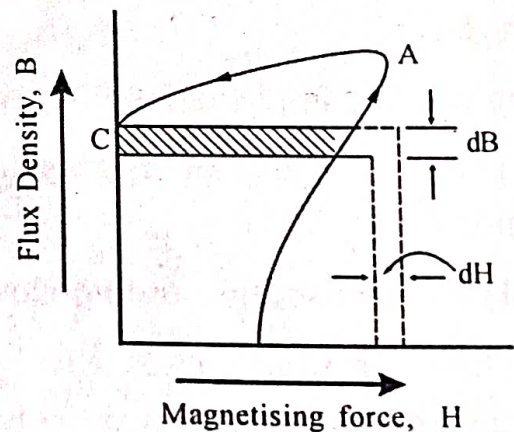
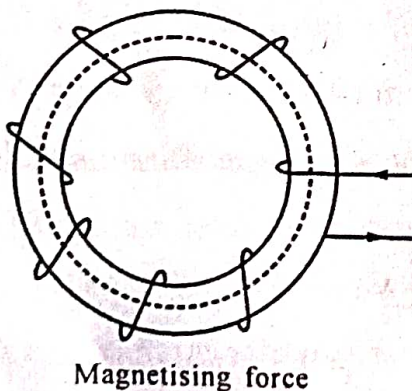


Fig . Hysteresis loop for a Ferromagnetic material

3. *What is paramagnetic material? Give example?*
4. *Write a short notes on soft magnetic materials*
5. *Explain energy expended in a magnetic cycle.*

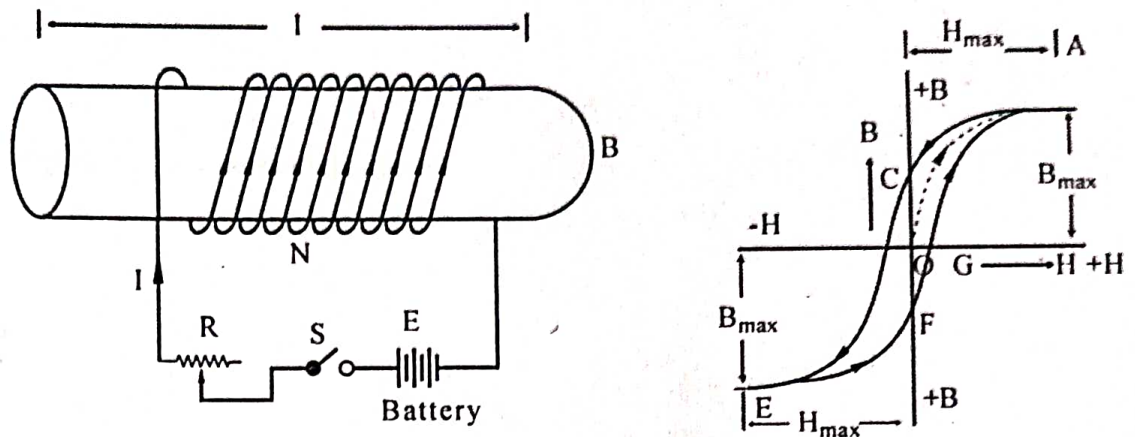


6. *What is diamagnetic material? Give example.*
7. *Write a short note on hard magnetic material.*
8. *What is ferromagnetic material? Give example.*
9. *What is spontaneous magnetisation?*



10. Explain Steinmetz Hysteresis law?

11. Explain magnetic hysteresis?



12. Write the uses of soft magnetic material.

13. Write the uses of hard magnetic material.

14. Write the uses of soft magnetic material.

## CHAPTER-6

### MATERIALS FOR SPECIAL PURPOSE



1. *Write the name of dehydrating material and its use?*
2. *Explain the principle of thermocouple and different types of thermocouple?*
3. *Define Fuse material?*
4. *What is fuse current?*
5. *Write a short note on lead?*
6. *Write a short note on solders?*
7. *What is the function of fuse?*
8. *What are the factors which effect contact performance?*
9. *Explain the function and uses of thermostat?*
10. *What are the advantages of fuse?*
11. *Write a short note on dehydrating material.*
12. *Write a short note on tape.*