Electrical Engineering Materials

Previous Year Questions, Sorted by Marks and Unit

Diploma in Electrical Engineering (NSQF Level 4), HSBTE. Exams covered: Feb 2022, July 2022, Feb 2023, July 2023, Dec 2024, May 2025, May 2026.

Repeated questions are listed once with all exams. Where options or wording differed between years, versions are merged with "/".

1 Mark Questions

Unit I

- In case of conductors, valence band and conduction band have: (a) More gap (b) Less gap (c) Overlapped (d) Moderate gap *(Unit I, Exam Feb 2022, July 2022, July 2023)*
- In case of insulators, valence band and conduction band have: (a) Less gap (b) Moderate gap (c) Large gap (d) Overlapped *(Unit I, Exam May 2026, July 2023)*
- Conduction band in insulating materials is: (a) filled (b) empty (c) partly filled (d) none of above *(Unit I, Exam Feb 2023)*
- Forbidden energy band in semiconductors is: (a) Low (b) Large (c) Medium (d) None of above *(Unit I, Exam Dec 2024)*
- Semiconductors have ___ conduction band and ___ valence band: (a) slightly filled; moderately filled (b) almost filled; moderately filled (c) almost empty; almost filled (d) almost filled; almost empty *(Unit I, Exam May 2025)*
- The materials which allow the flow of current through them are called: (a) Semi-conductors (b) Super conductors (c) Conductors (d) Non conductors *(Unit I, Exam Dec 2024)*
- The property of material by which they can be drawn into wires is known as: (a) Ductility (b) Creep/Elasticity (c) Malleability (d) Plasticity *(Unit I, Exam Dec 2024, Feb 2023, July 2022)*
- Forbidden energy gap between conduction band and valence band is 1 eV in case of conductors. (True/False) *(Unit I, Exam Dec 2024)*
- Nucleus of an element has ___ charge on it. *(Unit I, Exam Feb 2022, July 2023)*
- What is valence band? *(Unit I, Exam Feb 2022)*
- What is energy band? *(Unit I, Exam July 2023)*
- What is conduction band? *(Unit I, Exam July 2023)*
- Define Insulator. / What is Insulator? *(Unit I, Exam July 2023)*

Unit II

- The temperature coefficient of resistance is negative for: (a) Mercury/Tungsten (b) Steel (c) Carbon/Silicon (d) Copper *(Unit II, Exam May 2026, Dec 2024, July 2022)*
- The material having zero temperature coefficient of resistance is: (a) Manganin (b) Steel (c) Carbon (d) Aluminium *(Unit II, Exam Feb 2022, May 2025)*
- Most commonly used conducting material is: (a) Gold (b) Copper (c) Silver (d) Iron *(Unit II, Exam May 2026, July 2022, July 2023)*
- Poorest conductor of electricity is: (a) Carbon (b) Steel (c) Aluminium (d) Silver *(Unit II, Exam July 2023)*
- Conductivity of a good conductor should be ___: (a) Very low (b) Low (c) Medium (d) High *(Unit II, Exam July 2023)*
- Most commonly used overhead transmission line conductor is: (a) Copper (b) Steel (c) Galvanized iron (d) ACSR *(Unit II, Exam Dec 2024, Feb 2023, July 2022)*
- Which of the following is used for making coil of standard resistances? (a) Copper (b) Nichrome (c) Platinum (d) Manganin *(Unit II, Exam May 2025)*

- Which is most used semi-conducting material? (a) Gold (b) Copper (c) Silver (d) Silicon *(Unit II, Exam Dec 2024, Feb 2023)*
- The conduction of electricity in semiconductors takes place due to movement of: (a) positive ions only (b) negative ions only (c) positive and negative ions (d) electrons and holes *(Unit II, Exam May 2025)*
- For germanium the forbidden energy gap is: (a) 0.15 eV (b) 0.25 eV (c) 0.5 eV (d) 0.7 eV *(Unit II, Exam May 2025)*
- The minority carrier concentration is largely a function of: (a) forward biasing voltage (b) reverse biasing voltage (c) temperature (d) amount of doping *(Unit II, Exam May 2025)*
- The conductivity of an extrinsic semiconductor with temperature: (a) decreases (b) increases (c) remains constant (d) None *(Unit II, Exam May 2025)*
- In a P-type semiconductor, the minority carriers are ___. *(Unit II, Exam Feb 2023)*
- Silicon and Germanium are examples of ___ materials. *(Unit II, Exam Feb 2022)*
- Define Doping. / What is doping? *(Unit II, Exam May 2026, Dec 2024, Feb 2022, July 2022, May 2025)*
- Define Semiconductor. / What is semiconductor? *(Unit II, Exam Feb 2022, July 2023)*
- What is Extrinsic Semiconductor? *(Unit II, Exam May 2025)*
- Brass is an alloy of ___ and ___. *(Unit II, Exam May 2026, July 2022, July 2023)*
- Bronze is an alloy of ___. *(Unit II, Exam May 2025)*
- Nichrome is an alloy of ___ and chromium. *(Unit II, Exam Dec 2024, Feb 2023)*
- Give the full form of ACSR. / What is ACSR? *(Unit II, Exam May 2026, Dec 2024, Feb 2022, Feb 2023, July 2023, May 2025)*
- Name any two low resistivity copper alloys. *(Unit II, Exam May 2025)*
- Name any two conducting materials. *(Unit II, Exam May 2025)*
- Define Conductivity. *(Unit II, Exam May 2025)*
- Define Resistance. *(Unit II, Exam July 2023)*
- Give the S.I. unit of specific resistance. *(Unit II, Exam Feb 2022)*
- The relative permeability of superconducting material is: (a) normal (b) zero (c) one (d) infinitely large *(Unit II, Exam Dec 2024, May 2025)*
- Superconductors have ___ resistance. *(Unit II, Exam July 2022, July 2023)*
- What is Superconductivity? *(Unit II, Exam May 2025)*
- Superconductivity can be destroyed by: (a) adding impurities (b) reducing temperature (c) application of magnetic field (d) any of the above *(Unit II, Exam May 2025)*
- Electrical contact resistance is better between: (a) Carbon and Carbon (b) Metal and Metal (c) Carbon and Metal (d) Carbon and Insulator *(Unit II, Exam July 2023)*
- A good electric contact material should have all of the following properties except: (a) high resistivity (b) high resistance to corrosion (c) good thermal conductivity (d) high melting point *(Unit II, Exam May 2025)*
- What is Bundle Conductor? *(Unit II, Exam May 2025)*

Unit III

- Class H insulation has a working temperature of ___ °C: (a) 90 (b) 120 (c) 130 (d) 180 *(Unit III, Exam Dec 2024)*
- Class E insulation has a working temperature of ___ °C: (a) 90 (b) 120 (c) 130 (d) 180 *(Unit III, Exam Feb 2023, May 2025)*
- Class Y insulation has a working temperature of ___ °C: (a) 90 (b) 135 (c) 180 (d) >180 *(Unit III, Exam July 2022)*
- The common household glass is: (a) Boro silicate glass (b) High leaded glass (c) Soda lime glass (d) High silica glass *(Unit III, Exam Dec 2024, Feb 2023)*
- ___ is the main constituent of glass: (a) Fe_2O_3 (b) SiO_2 (c) Al_2O_3 (d) B_2O_3 *(Unit III, Exam May 2025)*

- Basic ceramic material is: (a) Lime stone (b) Clay (c) Cellulose (d) Sand *(Unit III, Exam Feb 2022, July 2023)*
- Plastic is: (a) good conductor of electricity (b) bad conductor of electricity (c) good conductor of heat (d) none *(Unit III, Exam Dec 2024)*
- ___ insulators are commonly used for overhead power lines: (a) Porcelain (b) Toughened glass (c) Both (a) and (b) (d) None *(Unit III, Exam Dec 2024)*
- Melting point of an insulator should not be high. (True/False) *(Unit III, Exam Dec 2024)*
- Polyethylene is produced by: (a) Condensation (b) Condensation polymerization (c) Addition polymerization (d) Co-polymerization of ethylene monomers *(Unit III, Exam Feb 2022)*
- Polystyrene is: (a) An ester (b) An alcohol (c) A hydrocarbon (d) An alkyl halide *(Unit III, Exam Feb 2022)*
- Field coils of electrical motors are insulated by: (a) Varnish (b) Cotton (c) Mica paper (d) Jute *(Unit III, Exam July 2023)*
- Air is an example of insulating material. (True/False) *(Unit III, Exam May 2026, Dec 2024, July 2022)*
- Name any two gaseous insulating materials. *(Unit III, Exam Dec 2024, July 2022)*
- Name any two insulating materials. *(Unit III, Exam Feb 2023)*
- PVC stands for ___. *(Unit III, Exam Dec 2024, July 2022, July 2023)*
- Write any two properties of Teflon. *(Unit III, Exam May 2026)*
- Write any two properties of asbestos. *(Unit III, Exam Dec 2024, July 2022)*
- Write any two properties of Bakelite. *(Unit III, Exam Feb 2023)*
- Write any two properties of glass. *(Unit III, Exam May 2025)*
- Natural rubber is obtained from ___. *(Unit III, Exam July 2023)*
- Define Breakdown Voltage. *(Unit III, Exam May 2025)*

Unit IV

- Which material is used for making the permanent magnet? (a) Alnico/Cobalt steel (b) Mu-metal (c) Silicon iron/Copper (d) Nickel iron *(Unit IV, Exam May 2026, Dec 2024, Feb 2023, July 2022, July 2023)*
- Hard magnetic materials are used for making permanent magnets. (True/False) *(Unit IV, Exam Dec 2024)*
- Name any two hard magnetic materials. *(Unit IV, Exam May 2026, Feb 2023)*
- Iron is a ___ material: (a) ferromagnetic (b) ferrimagnetic (c) paramagnetic (d) antiferromagnetic *(Unit IV, Exam Dec 2024)*
- Ferrite is associated with: (a) Ferromagnetic (b) Paramagnetic (c) Diamagnetic (d) Ferrimagnetic material *(Unit IV, Exam Feb 2022)*
- Which of the following is not ferromagnetic? (a) Nickel (b) Cobalt (c) Germanium (d) Silver *(Unit IV, Exam Feb 2022)*
- The magnetic material loses its magnetic properties at ___. *(Unit IV, Exam Dec 2024, Feb 2023, July 2022, May 2025)*
- By laminating the stator/rotor core of an induction motor, which loss is reduced? (a) Hysteresis (b) Eddy current (c) Frictional (d) Copper/All *(Unit IV, Exam May 2026, Dec 2024, Feb 2023)*
- Addition of 0.3 to 4.5% silicon to iron ___ the electrical resistivity of iron: (a) increases (b) decreases (c) does not change (d) None *(Unit IV, Exam May 2025)*
- Define Retentivity. *(Unit IV, Exam July 2023)*
- Define Permeability. *(Unit IV, Exam July 2023)*
- Define Eddy Current. *(Unit IV, Exam May 2025)*
- Mention S.I. unit of magnetic flux. *(Unit IV, Exam Feb 2022)*

Unit V

- Thermocouple works on the principle of: (a) Joule effect (b) Peltier effect (c) Seebeck effect (d) Thomson effect *(Unit V, Exam May 2026, July 2022, July 2023)*

- Thermocouple is used for measuring ___. *(Unit V, Exam Dec 2024, Feb 2023, July 2022)*
- Thermocouple is made up of two different types of metal. (True/False) *(Unit V, Exam Dec 2024)*
- How many junctions are constituted by a thermocouple? *(Unit V, Exam Feb 2022)*
- What is Thermocouple? *(Unit V, Exam May 2025)*
- The voltmeter used in thermocouple is of: (a) Large range (b) Low range (c) Medium range (d) Any *(Unit V, Exam July 2023)*
- Solder is an alloy of: (a) Tin and lead (b) Copper and lead/aluminium (c) Nickel, copper, zinc (d) Silver, copper and lead *(Unit V, Exam Dec 2024, Feb 2022, Feb 2023, July 2022, May 2025)*
- Define soldering. *(Unit V, Exam Dec 2024)*
- Material used for fuse wire should have ___ melting point: (a) High (b) Low (c) Medium (d) Any *(Unit V, Exam Feb 2022, July 2023)*
- Define fuse. *(Unit V, Exam July 2023)*
- Expand HRC. *(Unit V, Exam July 2023)*
- Body of the kit-kat fuse is made up of ___. *(Unit V, Exam Feb 2023)*
- Body of the cartridge fuse is made up of ___. *(Unit V, Exam May 2025)*
- Transformer core is made up of: (a) Cast iron (b) Silicon steel (c) Plastic (d) Copper *(Unit V, Exam July 2022)*
- Transformer winding is made from: (a) Copper (b) Aluminium (c) Iron (d) Silicon steel *(Unit V, Exam July 2023)*
- Transformer bushings are made up of: (a) Porcelain (b) Copper (c) Silicon steel (d) Plastic / Bushings of transformer are made from ___. *(Unit V, Exam July 2023)*
- Stator core of 3-phase induction motor is made up of: (a) Cast iron (b) Silicon steel (c) Carbon (d) Copper *(Unit V, Exam Dec 2024)*
- Frame of induction motor is made of: (a) Cast iron/Silver (b) Aluminium (c) Stainless steel/Copper (d) Carbon *(Unit V, Exam Feb 2022, July 2023)*
- Frame of DC motor is made of: (a) Copper (b) Carbon (c) Cast iron (d) Silicon steel / The outer frame of DC machine is made of ___. *(Unit V, Exam July 2023)*
- Name the material used in making yoke of DC machine. *(Unit V, Exam Feb 2022)*
- Brushes of DC machines are made up of: (a) Cast iron (b) Silicon steel (c) Carbon (d) Copper *(Unit V, Exam Feb 2023)*
- Brushes in a DC machine are made of Bronze. (True/False) *(Unit V, Exam Dec 2024)*
- Brushes of 3-phase slip-ring induction motor are made up of: (a) Cast iron (b) Silicon steel (c) Carbon (d) Copper *(Unit V, Exam May 2025)*
- Slip ring of A.C. machine is made up of ___. *(Unit V, Exam Dec 2024)*
- Commutator of a DC machine is made up of ___. *(Unit V, Exam July 2022, May 2025)*
- Armature winding of DC machine/generator is made up of ___. *(Unit V, Exam Feb 2023, July 2023)*

2 Mark Questions

No 2-mark questions appear in any of the 10 papers.

Short Answer Questions

Unit I

- Give a brief idea on classification of materials. *(Unit I, Exam July 2023)*
- Write short notes on: (a) Conducting materials (b) Semi-conducting materials (c) Insulating materials. *(Unit I, Exam July 2023)*
- Draw and explain energy band for conducting materials. *(Unit I, Exam July 2023)*

- Draw and explain energy band for insulating materials. *(Unit I, Exam July 2023)*
- Differentiate between conductors and semiconductors with diagram. *(Unit I, Exam Feb 2022)*
- Differentiate between conductors, semiconductors and insulators. *(Unit I, Exam July 2022)*
- Explain conductors, semiconductors and insulators with their energy bands. *(Unit I, Exam May 2025)*

Unit II

- Explain conducting materials. Give examples of conducting materials. *(Unit II, Exam Dec 2024)*
- Make a comparison between hard drawn copper and annealed copper. *(Unit II, Exam Dec 2024)*
- Write the applications of silver, gold and platinum in electrical engineering field. *(Unit II, Exam Dec 2024)*
- Write the properties and applications of copper. *(Unit II, Exam July 2022, Feb 2023, May 2025)*
- Write the properties and applications of constantan. *(Unit II, Exam May 2026)*
- Define semiconductor. Mention any four / discuss engineering applications of semiconductors. *(Unit II, Exam Feb 2023, Dec 2024, May 2025, May 2026)*
- Differentiate between P-type and N-type semiconductor. *(Unit II, Exam Dec 2024)*
- Define/Explain superconductivity and mention its applications (also asked as "Describe superconductors and their applications"). *(Unit II, Exam Feb 2022 (asked twice), July 2022, Feb 2023, July 2023, Dec 2024, May 2025, May 2026)*
- Explain different factors affecting the resistivity of conducting materials. *(Unit II, Exam Feb 2023, July 2023)*
- List the desirable properties of a good conductor. *(Unit II, Exam July 2023)*
- Write the properties of low resistivity conducting material. *(Unit II, Exam Dec 2024)*
- Mention the classifications of conducting materials. *(Unit II, Exam May 2025)*
- Explain various/general properties of aluminium (as conductor). *(Unit II, Exam July 2023, May 2025)*
- Explain the applications of steel in the field of electrical engineering. *(Unit II, Exam May 2025)*
- Write the properties and applications of brass. *(Unit II, Exam Dec 2024)*
- Describe the practical applications of brass and bronze. *(Unit II, Exam May 2025)*
- Write the applications of platinum. *(Unit II, Exam May 2025)*
- Discuss the applications of manganin. *(Unit II, Exam May 2025)*
- Explain the properties of Nichrome and give reasons why copper and aluminium are not used in making heating elements. *(Unit II, Exam Feb 2022)*
- What is an intrinsic semiconductor? *(Unit II, Exam July 2023)*
- What is an extrinsic semiconductor? *(Unit II, Exam July 2023)*
- Define semiconductor. Explain the merits and demerits of a semiconductor. *(Unit II, Exam July 2022)*
- Explain the properties of semiconductors. *(Unit II, Exam May 2025)*
- What are bundle conductors and their applications? *(Unit II, Exam May 2025)*
- What are the materials used for resistor, inductor and capacitors? *(Unit II, Exam May 2025)*

Unit III

- Explain the thermal classification of insulating material. *(Unit III, Exam July 2022, Dec 2024, May 2026)*
- Explain the thermal properties of insulating materials. *(Unit III, Exam July 2023, Dec 2024)*
- Explain in brief mechanical properties of insulating material. *(Unit III, Exam Dec 2024, May 2025)*
- Describe the dielectric strength of insulating materials. *(Unit III, Exam Dec 2024)*
- Write the properties of Bakelite and its two uses. *(Unit III, Exam May 2026)*
- Explain in brief about the thermosetting material. *(Unit III, Exam May 2026)*
- Write a short note on thermoplastic materials. *(Unit III, Exam May 2025)*
- Enlist the properties of Sulphur hexafluoride gas and Bakelite. *(Unit III, Exam Dec 2024)*
- Write the properties and applications of SF6. *(Unit III, Exam May 2025)*

- Mention the electrical and chemical properties of insulating material. *(Unit III, Exam July 2022, Feb 2023)*
- Explain electrical properties of insulating materials. *(Unit III, Exam July 2023, May 2025)*
- Define dielectric strength and dielectric loss. Mention their SI units. *(Unit III, Exam July 2022, Dec 2024)*
- Mention the factors affecting dielectric strength of insulating materials. *(Unit III, Exam Feb 2023)*
- State and explain characteristics of good insulating material. *(Unit III, Exam July 2023)*
- What are the factors affecting selection of an insulating material? *(Unit III, Exam Feb 2022)*
- Explain the importance of insulating materials in modern engineering applications. *(Unit III, Exam July 2023)*
- Write the different types of insulating materials with two examples each. *(Unit III, Exam Feb 2023)*
- Write the properties of Mica and its types. *(Unit III, Exam Dec 2024)*
- Explain why and where mica is used. *(Unit III, Exam Feb 2023)*
- Explain why and where mica and Bakelite are used. *(Unit III, Exam July 2022)*
- State the properties and applications of Bakelite. *(Unit III, Exam July 2023)*
- Write a short note on cotton. *(Unit III, Exam Feb 2022)*
- Compare/Differentiate between thermoplastic and thermosetting plastic. *(Unit III, Exam Feb 2022, July 2023)*
- Explain the procedure for preparation of PVC. *(Unit III, Exam July 2023)*
- What are the classifications of plastic? *(Unit III, Exam May 2025)*

Unit IV

- List the desirable properties of good magnetic materials. *(Unit IV, Exam Dec 2024)*
- Differentiate between soft and hard magnetic materials. *(Unit IV, Exam Feb 2022, July 2022, July 2023, Dec 2024, May 2026)*
- Write properties of Mu metal. *(Unit IV, Exam May 2026)*
- Write the properties of Chromium steel. *(Unit IV, Exam Dec 2024)*
- Write a short note on soft ferrites and its uses. *(Unit IV, Exam May 2025)*
- Define hysteresis losses and discuss the factors on which hysteresis loss depends. *(Unit IV, Exam July 2022, May 2025, May 2026)*
- What are ferromagnetic materials? State their properties. *(Unit IV, Exam July 2023)*
- Classify ferromagnetic materials (in detail / with two examples of each). *(Unit IV, Exam Feb 2023, July 2023)*
- Explain properties of cobalt steel and chromium steel with their applications. *(Unit IV, Exam Feb 2022)*
- Define eddy current losses and discuss the factors on which they depend. *(Unit IV, Exam Feb 2023, Dec 2024)*
- Why do eddy current and hysteresis losses occur in AC? *(Unit IV, Exam Feb 2022)*
- Explain the concept of eddy current and hysteresis loss for magnetic materials. *(Unit IV, Exam May 2025)*
- Why does the core of a transformer get hot? *(Unit IV, Exam Feb 2022)*

Unit V

- Write a short note on bi-metals and its applications. / What is a bi-metal strip? *(Unit V, Exam Feb 2022, July 2022, Feb 2023, Dec 2024, May 2026)*
- Discuss thermocouple with its materials/neat diagram and mention its important applications. *(Unit V, Exam Feb 2022, July 2022, Feb 2023, Dec 2024, May 2025)*
- What is a fuse? Discuss the important properties of fuse wire. *(Unit V, Exam Feb 2022, July 2022, Feb 2023, July 2023, Dec 2024, May 2025)*
- Explain the process of soldering and properties of materials used as solder. *(Unit V, Exam July 2022, Feb 2023, July 2023, Dec 2024, May 2025)*
- Write a short note on HRC fuse. / Draw and explain HRC fuse. *(Unit V, Exam Feb 2022, July 2023)*

- What is a thermocouple and its use? *(Unit V, Exam July 2023)*
- Make a list of materials along with names used for making parts of an induction motor. *(Unit V, Exam Dec 2024)*
- Make a list of materials used for making parts of a transformer. *(Unit V, Exam July 2022, Feb 2023)*
- Write various engineering materials necessary for fabrication of a transformer. *(Unit V, Exam July 2023)*
- Write various engineering materials necessary for fabrication of a DC motor. *(Unit V, Exam July 2023)*
- Give a brief description of materials used in electrical machines. *(Unit V, Exam July 2023)*

Long Answer Questions

Unit I

- Differentiate between conductors, semiconductors and insulators with the help of (energy band) diagrams. *(Unit I, Exam Feb 2023, Dec 2024, May 2026)*
- Classify materials into conducting, semiconducting and insulating on the basis of their atomic structure / Comparison between them on the basis of atomic structure. *(Unit I, Exam July 2023, Dec 2024, May 2025)*

Unit II

- Discuss low resistivity conducting material with their properties and applications. *(Unit II, Exam May 2026)*
- Discuss high resistivity conducting material with their properties and applications. *(Unit II, Exam July 2022, May 2025)*
- Discuss the properties and applications of aluminium. *(Unit II, Exam Feb 2022, July 2023)*
- Discuss the properties and applications of copper. *(Unit II, Exam July 2023)*
- Differentiate between P-type and N-type semiconductors. *(Unit II, Exam Feb 2022)*

Unit III

- Write properties and applications of any two: (a) Solder (b) C.R.G.O (c) Melamines. *(Unit III, IV, V, Exam Dec 2024)*
- Explain the thermoplastic resin and thermosetting plastic resin with examples, their properties and uses. *(Unit III, Exam July 2022, Feb 2023, Dec 2024)*
- What are insulating materials? Explain different thermal properties of insulating materials. *(Unit III, Exam July 2023)*
- Explain the insulating materials with their properties and applications. *(Unit III, Exam May 2025)*
- Write a note on: (i) Insulating paper (ii) Transformer oil. *(Unit III, Exam Feb 2022)*
- Write a note on: (a) Transformer oil (b) Hard magnetic materials. *(Unit III & IV, Exam Dec 2024)*

Unit IV

- Classify magnetic materials depending upon their magnetic characteristics with examples. *(Unit IV, Exam July 2022)*
- Describe the magnetic materials and their applications. *(Unit IV, Exam May 2025)*

Unit V

- Explain the various engineering materials necessary for fabrication of an induction motor. *(Unit V, Exam May 2026)*
- Explain various engineering materials for fabrication of a motor. *(Unit V, Exam Dec 2024)*
- Write various engineering materials necessary for fabrication of a transformer along with their part names, and explain the reasons for using these materials. *(Unit V, Exam May 2025)*
- Write various engineering materials necessary for fabrication of induction motors along with part names, and explain the reasons for using them. *(Unit V, Exam Feb 2023)*

- Explain various engineering materials necessary for fabrication of AC and DC motors. *(Unit V, Exam July 2023)*
- Explain various engineering materials necessary for fabrication of a transformer. *(Unit V, Exam July 2023)*
- Explain the various engineering materials used for electrical machines. *(Unit V, Exam May 2025)*