

Laquer – Constituents and Functions (16 Marks)

1. Introduction

- **Lacquer** is a **protective and decorative coating** applied to surfaces.
 - It forms a **hard, smooth, and glossy finish** after drying.
 - Used on **metals, wood, plastics, and furniture** to improve appearance and protect from damage.
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2. Constituents of Lacquer

Constituent	Function
Film-forming resin	Main ingredient that forms the hard, protective layer (e.g., nitrocellulose, acrylic).
Plasticizer	Adds flexibility and prevents cracking of the lacquer film (e.g., camphor, dibutyl phthalate).
Solvent	Dissolves resin and helps in smooth application (e.g., acetone, alcohol).
Drier / Catalyst	Speeds up the drying process (e.g., cobalt naphthenate).
Pigments/Dyes	Gives color to the lacquer (optional).
Additives	Improve properties like UV resistance, flow, or gloss.

3. Functions of Each Constituent

- **Resin:** Provides strength, durability, and shine.
 - **Plasticizer:** Makes the film flexible and prevents peeling.
 - **Solvent:** Makes lacquer easy to apply; evaporates after use.
 - **Drier:** Reduces drying time, helps in quick hardening.
 - **Pigments:** Add color and aesthetic value.
 - **Additives:** Improve resistance to weather, chemicals, and aging.
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4. Properties of Lacquer

- **Fast drying.**
 - **Glossy and smooth finish.**
 - **Hard and protective surface.**
 - **Resistant to water, chemicals, and abrasion.**
 - **Can be colorless or colored.**
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5. Applications

- **Automotive coatings** – car body paint.
 - **Furniture polish** – smooth wooden surfaces.
 - **Metal surface coating** – tools, appliances.
 - **Plastic and leather finish.**
 - **Nail polish** (form of cosmetic lacquer).
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6. Advantages

- **Quick drying** compared to paints.
 - **Attractive appearance** – glossy and smooth.
 - **Protects from corrosion and wear.**
 - **Can be applied in thin, even layers.**
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7. Disadvantages

- **Highly flammable** due to solvents.
 - **Strong odor** – requires proper ventilation.
 - **May require multiple coats** for durability.
 - **Not very flexible** on expanding materials.
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8. Summary

- Lacquer is a **coating material** made from **resins, solvents, plasticizers, and additives.**
 - It gives a **protective and shiny finish** to many materials.
 - Useful in **furniture, automotive, and industrial applications.**
 - Easy to apply, fast-drying, but must be used with care due to flammability.
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