QUANTITY SURVEY AND VALUATION
Unit - V

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- CONTRACTS AND TENDERS FOR CONSTRUCTION PROJECTS
- **Introduction**
- Construction projects involve
- Owner
- Consultant
- Contractor
- Suppliers
- Government agencies
- Proper contracts reduce disputes.

- A contract is a legally enforceable agreement between two or more parties.
- Essential elements
- Offer
- Acceptance
- Consideration
- Competent parties
- Lawful object
- Free consent

Importance of Contracts

Legal protection
Defines responsibilities
Allocates risks
Controls cost
Controls quality
Avoids disputes

Types of Construction Contracts

Lump Sum Contract
Item Rate Contract
Percentage Rate Contract
Cost Plus Contract
Labour Contract
Turnkey Contract
EPC Contract

SEPARATE OR INDIVIDUAL WALLS METHOD

Labour Contract

Contractor supplies

Labour only

Owner supplies

Materials

Machinery

Sinking Fund Calculation

- **(for Valuation)**
- A **Sinking Fund** is an amount set aside every year so that enough money accumulates to replace or reconstruct an asset (such as a building) at the end of its useful life. The fund earns compound interest over time.
- **Formula**
- A=P×i(1+i)n−1A = \frac{P \times i}{(1+i)^n - 1}A=(1+i)n−1P×i Where:
- **A** = Annual sinking fund installment (₹)
- **P** = Amount required at the end of the asset's life (₹)
- **i** = Annual rate of interest (decimal form)
- **n** = Useful life of the asset (years)

Objectives of Valuation

- To determine the **market value** of a property.
- To fix the **sale or purchase price**.
- To determine the **amount of loan (mortgage)**.
- To calculate **property tax**.
- To assess the **insurance value**.
- To determine **compensation** for land acquisition.
- To estimate **rent**.

Types of Property Value

- **Market Value** – Price at which the property can be sold in the open market.
- **Book Value** – Original cost minus depreciation.
- **Capitalized Value** – Present value of future net income.
- **Replacement Value** – Cost of constructing a similar building at current rates.
- **Salvage Value** – Value of reusable materials after demolition.
- **Scrap Value** – Value of materials sold as scrap after demolition.
- **Distress Value** – Value obtained in a forced sale.
- **Assessed Value** – Value determined for taxation purposes.

Methods of Valuation

- **1. Rental Method**
- Based on annual rental income.
- Suitable for rented residential and commercial buildings.
- **2. Direct Comparison Method**
- Compares the property with recently sold similar properties.
- Suitable where market data are available.
- **3. Profit Method**
- Used for hotels, cinemas, shopping complexes, hospitals, etc.
- Based on net annual profit.
- **4. Cost (Land and Building) Method**
- Value = Land Value + Present Value of Building
- Suitable for schools, hospitals, and government buildings.
- **5. Development Method**
- Used for undeveloped land having future development potential.
- **6. Depreciation Method**
- Building value is determined after deducting depreciation from the original cost.