

## 2.18 30284 ESTIMATING & COSTING

### UNIT-1 INTRODUCTION:

- 1.1 Purpose
- 1.2 Importance of estimating
- 1.3 Common items of works in civil engineering construction works
- 1.4 Units of measurement for common items of works
- 1.5 Methods of measurement
- 1.6 Explanation of common terms used for estimating
- 1.7 Different types of estimates and their significance
- 1.8 Merits and demerits.
- 1.9 Methods of taking out quantities
- 1.10 Study of Basic Schedule of Rates (B.S.R.)

### UNIT-2 RATE-ANALYSIS:

- 2.1 Factors affecting cost of work
- 2.2 Explanation of terms
- 2.3 Prime cost
- 2.4 Original cost & Provisional items
- 2.5 Provisional sum
- 2.6 Day work, item wise
- 2.7 Analysis of cost of material
- 2.8 Labour
- 2.9 Transport
- 2.10 Establishment charges and incidentals
- 2.11 Preparation of analysis of rates for items of work involved in building construction mentioned in practical syllabus.

### UNIT-3 SPECIFICATIONS:

- 3.1 Importance of specifications. Principles for writing out specifications, types of specification
- 3.2 Writing general and detailed specifications for items of work in building construction mentioned in practical syllabus.

### UNIT-4 DETAILED ESTIMATES FOR BUILDINGS:

- 4.1 Calculation of quantities
- 4.2 Preparing abstract of cost for a residential building.

### UNIT-5 EARTH WORK CALCULATIONS FOR ROAD & RAIL FORMATION:

- 5.1 Earthwork calculations and estimates for roads and rail formation
- 5.2 For earth work following methods may be used:
  - 5.2.1 Mean depth method. .
  - 5.2.2 Mean area method.
  - 5.2.3 Prismoidal formula method

- 5.2.4 Graphical method
- 5.3 Using longitudinal and typical cross sections
- 5.4 Cross section for different stations.
- 5.5 Finding earth work by these sections
- 5.6 Calculation of permanent and temporary lands for roads
- 5.7 Economical depth of digging

#### **UNIT-6 VALUATION OF PROPERTY AND RENT FIXATION:**

- 6.1 Objects of valuation
- 6.2 Free-hold property
- 6.3 Lease-hold property
- 6.4 Property income
- 6.5 Obsolescence
- 6.6 Market-value
- 6.7 Book value
- 6.8 Distress value
- 6.9 Monopoly value
- 6.10 Salvage value
- 6.11 Scrap value
- 6.12 Accommodation value
- 6.13 Replacement value
- 6.14 Sentimental value
- 6.15 Speculative value
- 6.16 Factors affecting the value of the property
- 6.17 Annuity
- 6.18 Capital cost
- 6.19 Capitalized value
- 6.20 Year's purchase
- 6.21 Methods of determining depreciation
- 6.22 Valuation of property
- 6.23 Method of determining valuation of property
- 6.24 Typical valuation report
- 6.25 Types of rents
- 6.26 Rules of capital cost fixation for govt. buildings
- 6.27 Rules for calculation of standard rent

#### **UNIT-7 CONTRACT SYSTEM:**

- 7.1 Requirements of contracts
- 7.2 Types of contracts
- 7.3 Lumpsum contract
- 7.4 Item rate contract

- 7.5 Percentage contract
- 7.6 Contract documents
- 7.7 Security for performance of contracts
- 7.8 Conditions of contract
- 7.9 Termination of contract
- 7.10 Labour contracts
- 7.11 Negotiated contracts
- 7.12 Earnest money
- 7.13 Security deposit
- 7.14 Types of tenders
- 7.15 Security of tenders
- 7.16 Acceptance of tenders
- 7.17 Tender notice

#### **UNIT-8 PROCEDURE OF WORKS:**

- 8.1 Main staff structure of engineering department
- 8.2 Duties of junior engineer
- 8.3 Administrative approval
- 8.4 Expenditure sanction or approval
- 8.5 Technical sanction or an approval
- 8.6 Appropriation and re-appropriation of funds
- 8.7 Procedure for original minor and major works
- 8.8 Repair works
- 8.9 Types of estimates
- 8.10 Preliminary estimate.
- 8.11 Cubical content estimate.
- 8.12 Plinth area estimate.
- 8.13 Revised estimate
- 8.14 Supplementary estimate
- 8.15 Daily labour on muster roll system
- 8.16 Completion report

#### **UNIT-9 PUBLIC WORKS ACCOUNTS:**

- 9.1 Payment to labourers
- 9.2 Payment to contractors and suppliers
- 9.3 Standard measurement book
- 9.4 First and final bill
- 9.5 Running account bill

#### **Reference Book:**

1. Estimating Costing Valuation

