

31064 ESTIMATING AND COSTING II

DETAILED SYLLABUS

Unit 1

1.1 Specification Writing Specification – Necessity – Importance of specifications- Types of specifications – General specification , Detailed specification and Standard specification - Essential requirements of specifications – General and Technical provisions of detailed specifications - Specifications for various materials like Cement, Sand, Brick, Timber, Stone aggregate, Reinforcement steel, Tiles, Bitumen, Water etc- General specification for a building – General specification for a Culvert - General specification for a Concrete / Tar Road project - Examples—Detailed specifications for works such as Earth work excavation, Foundation concrete, Stone / Brick masonry, Doors / Windows, RCC in columns / beams / slabs, Plastering, Flooring, Painting / Varnishing, DPC, A.C sheet roofing, Rain water pipes, Centering for roofing, Weathering course, Under reamed Piles, Water bound macadam / Tar roads, Surface dressing with bitumen, Revetments, etc- Examples - Steps involved in writing Standard specification – Advantages of Standard specifications - Writing standard specifications with reference to Tamil Nadu Building Practice / Indian Standards / NBC - Examples

1.2 Report writing Definition of report – Types – Necessity - Documents to accompany the report - Points to be considered while writing technical reports Writing typical Technical reports for the proposed projects such as: Construction of Buildings (Residential / Hospital / School/ Community Hall) Laying a village road (WBM / Tar / Concrete road) Construction of a bridge/ culvert across a river Construction of a Pedestrian Sub-way/ Foot over bridge across a City road Water supply system for a village Sewage treatment plant for a residential colony in a sub urban area Construction of a new bus terminus in a developing town

Unit II

2.1 Valuation Value - Difference between Cost and Value - Purpose of valuation – Definition of terms: Capital cost, Gross income and Net income, Outgoings, Capitalized value and Capital value, Scrap value, Salvage value, Obsolescence, Sinking fund, Depreciation, Years purchase, Book value, Market value, Rateable value, Deferred value of land, Lease, Mortgage, Annuity, Amortization - Factors affecting the value of a property - Classification of Properties - Types of Leases - Problems on determination of Sinking Fund - Problems on calculation of Depreciation - Methods of valuation of Buildings - Valuation based on Comparison / Rent / Profit / Present value - Methods of valuation of Lands - Mathematics of Valuation – Valuation Tables - Problems on Valuation of Buildings / Properties

2.2 Rent Calculation Fixation of rent – Definition of terms: Standard rent, Fair rent or Reasonable rent, Economical rent, Market rent, Rent certificate - Rent control – Factors influencing the rent of a building - Problems on rent calculation – Fixing rent of a Private building used by Government – Fixing rent of a Government building used by its

Unit III

3.1 Analysis of rates for Sanitary and Water supply works Earth work in trenches - Timbering of trenches - Laying stone ware / RCC / GI pipes – Lead joint for cast iron pipes - Cutting and jointing G.I.Pipes, PVC Pipes and Stoneware Pipes - Constructing a man hole in the sewage line of a residence - Providing a dispersion trench for the septic tank of a residential flat – Supplying a Ferro cement circular ring for well sinking - Laying PVC Plumbing lines concealed in to brick masonry walls - Supplying and fixing Indian type water closets with flushing tanks - Supplying and fixing European type water closet with flushing tank - Supplying and fixing a wash basin with tap

3.2 Analysis of rates for Bridge/ Road works and Miscellaneous items Random Rubble Stone masonry in Abutments and Piers - Providing form work for Deck slabs - R.C.C for Columns / Beams / Deck Slab – Parapets - Hand rails - Earth filling in embankments - Soling for a WBM road - Laying WBM road over the existing soling - Surface dressing - Surface Blinding - Providing Pre mix carpet - Laying Concrete roads - Apron and Revetment works in Canals -Wooden frames for doors - Paneled doors - Glazed windows - Steel Grill gates – Steel grills for windows - Supplying and fixing Aluminum partitions - Providing wooden shutters to lofts - Expansion joint in R.C roof (Exposure to use of software in Analysis of rates - not for examination)

Unit IV

Taking Off Quantities of P.H.Engineering Structures using Trade System Preparing detailed estimate using Trade system and Take off quantities for all items of works in the following P.H. Engineering Structures:

- 1 Septic tanks with dispersion trench / soak pit
- 2 Open Well with Masonry Steining
- 3 Rain water harvesting- Shallow Recharge Well
- 4 Square RCC Over Head Tank on Four columns with Staging

Unit V

Taking off Quantities of Road / Bridge Structures using Trade System Preparing detailed estimate using Trade system and Take off quantities for all items of works in the following Road / Bridge Structures:

- 1 Water Bound Macadam Road
- 2 Cement Concrete Road with side drains
- 3 Single span Slab Culvert
- 4 Tee Beam Bridge

Reference Book : 1. Rangawala, “Estimating & Costing” , Charotar Publishing; 2. N.A.Shaw, “Quantity Surveying & Valuation”, Khanna Publishers; 3. L.N.Dutta, “Estimating & Costing”, Dhanpat Rai & Sons