

**INDIRA TECHNICAL INSTITUTE EDUCATION SOCIETY
NASHIK
ADVANCE DIPLOMA CIVIL ENGINEERING SERVICES
(ADCES)**

THEORY PAPER I : Theory syllabus for this Diploma Paper I is same as 100 Marks
CIVIL DRAUGHTSMAN (CD – I)
Refer this syllabus booklet Page No. _____

THEORY PAPER II : Drawing paper syllabus for this Diploma Paper II is same as 100 Marks
CIVIL DRAUGHTSMAN (CD – II)
Refer this syllabus booklet Page No. _____

SESSIONAL MARKS : (Internal) 50 Marks

THEORY PAPER III : Theory syllabus for this Diploma Paper III is same as 100 Marks
ARCHITECTURE DRAUGHTSMAN (AD – III)
Refer this syllabus booklet Page No. _____

THEORY PAPER IV : Theory syllabus for this Diploma Paper IV is same as 100 Marks
DIPLOMA CIVIL ENGINEERING SERVICES (DCES –IV)
Refer this syllabus booklet Page No. _____

THEORY PAPER V : Syllabus for this paper is printed below 100 Marks
Refer this syllabus booklet Page No. _____

Total : (550 marks)



**ADVANCE DIPLOMA CIVIL ENGINEERING SERVICES
(ADCES – V)**

EXAM SCHEME: THEORY PAPER 100 MARKS – 3 HRS.

THEORY SYLLABUS

R.C.C. DESIGN AND CIVIL WORKS

1. R.C.C. DESIGN OF BUILDING ELEMMENTS :

- ❖ Introduction to R.C.C. Design.
- ❖ Designing concept.
- ❖ Methods of Design.
 - i) R.C.C. footing
 - ii) R.C.C. Slab
 - iii) Column & Slab
- ❖ Complete design of G+2 & G+4 building

- ❖ Design of compression & Tension members.

2. IRRIGATION ENGINEERING :

- ❖ Introduction to Irrigation.
- ❖ Concept of Dams, Canals & Reservoirs, Spillways.
- ❖ Problems Types of Dams, Canals etc. Sivities & Wastweirs.

3. DESIGN OF STEEL STRUCTURE :

- ❖ Concept of steel structure.
- ❖ Types of materials used, different forms & sizes as per Indian standard (I.S.I.) for Channels, Angles etc.
- ❖ Design of simple Roof Trusses.
- ❖ Concept of Girders & Design of Girders.
- ❖ Concept of Rivetting & Welding.
Their Merits & Demerits.
- ❖ Types of rivets & their sizes.

4. WATER SUPPLY AND SANITARY ENGINEERING :

- ❖ Different equipment used in water supply & water purification plants such as pumps.
- ❖ Detail procedure of water purification plant & their layout.
- ❖ Waste disposal method adopted in sanitary Engineering, System of sanitation.
- ❖ Use of manholes, Inter – Cepting traps Inspection chamber etc. Excreta Disposal & Unscrewed Areas.

5. STEEL FABRICATION :

- ❖ Introduction, Different & methods used.
- ❖ Different materials used for erection of Grills, Door & Windows & Construction.
- ❖ Concept & Construction of Sliding windows & doors by using Aluminium & Glass material.]
- ❖ Fabrication procedure, Cutting, Straightening, Groping etc.

6. ROADS : BRIDGES & RAILWAYS.

- ❖ Different types of Roads, Railway Gauges.
- ❖ Materials used & Construction of Roads.
- ❖ Construction of cement concrete road & different Machinery used, Classification of bridges.
- ❖ Maintenance of different road, Types of R.C.C. bridges, Railway development in India.

7. WATER PROOFING WORKS :

- ❖ Materials for water proofing, tools and Methods used.
- ❖ Water proofing to W/C, bathrooms, Kitchen, Window sills & walls.
- ❖ Water proofing while casting slab.
- ❖ Water proofing to old slab & methods used.

8. ELECTRIFICATION WORKS :

- ❖ Different types of wiring Systems & Materials.
- ❖ Tools & accessories used in Electrification works.
- ❖ Specification & Importance of Electrification works & symbol in Electrification.

9. PAINTING & WALL FINISHES :

- ❖ Different varieties of paints.
- ❖ Coating on different surfaces – procedure.
- ❖ Method of waterproof paining & preparation of surface.
- ❖ Wall paper fixing & varieties of wall papers used.

10. PLUMBING & DRAINAGE WORKS :

- ❖ Types of pipes, tools & equipment used.
- ❖ House plumbing, various accessories required as Taps, valves & fixing the same.
- ❖ Drainage System to Residential & Commercial building Detail procedures.

11. BUILDING MAINTENANCE WORK :

- ❖ Old Plaster Repairing.
- ❖ Repair R.C.C. Slab, Leakage through parapet wall, basements, side walls.
- ❖ Maintenance of different types of floorings.

12. SURVEYING & LEVELLING :

- ❖ Concept, Leveling Dumpy Level, Theodolite & chain surveying.
- ❖ Different tools required for chain surveying.
- ❖ Recording the levels in book & terms used.
- ❖ To prepare contour maps.

13. THEORY OF STRUCTURE :

- ❖ Concepts Introduction.
- ❖ Types of loads coming on structure & etc.
- ❖ Different Bending movement diagram, simply supported beams & cantilever beams.

14. SETTING OUT FOUNDATION :

- ❖ Concept of Centreline plan & foundation plan.
- ❖ Setting out foundation on ground method.

15. HYDROULICS :

- ❖ Introduction & concept.
- ❖ Meaning of Discharge, flow, velocity.
- ❖ Problems on Discharge & Velocity.
- ❖ Types of pressures.

16. CHECK LIST FOR DIFFERENT BUILDING WORKS :

- ❖ Brick work, Plastering, Flooring checking.
- ❖ Termite proofing methods in foundation & superstructure.

GUIDELINE FOR PAPER SETTER FOR PAPER – V :

1. Q. 1 Compulsory – Objective & descriptive – 20 Marks
2. Q. 2 to Q. 8 Solve any 6 questions – 80 Marks (or modify as per requirement)
(Each question of 16 Marks)

REFERENCE BOOKS FOR CIVIL FACULTY

1. Building Construction - Sushilkumar
2. Building Construction - Rangwala
3. Water Supply & Sanitary Engineering - Bindra
4. Engineering Drawing – N. D. Bhatt
5. Civil Engineering Drawing – Shah & Kale, Patki
6. R.C.C. Design – Shah & Kale
7. Building Material - Rangwala
8. Construction Management Account - Agarwal
9. Estimating & Costing – B. N. Dutta
10. Estimating & Costing - Mule
11. Estimating & Coasting - Chakraborty
12. A To Z Civil Engineering Practice - Mantri

