

INDIAN TECHNICAL EDUCATION SOCIETY, MUMBAI

CERTIFICATE AND DIPLOMA CIVIL FACULTY COURSES EXAMINATIONS

SYLLABUS & SCHEME OF EXAMINATIONS

SCHEME OF EXAMINATION

| Sr. No. | EXAMINATION AND ABBREVIATION | PAGE NO. | PAPER |
|---------|---|------------------|-------------------------------|
| | CERTIFICATE COURSES | | |
| 1 | Civil Draughtsman [CD] | 2 to 5 | Two papers - 100 Marks each |
| 2 | Architecture Draughtsman [AD] | 7 to 9 | Four papers - 100 Marks each |
| 3 | Interior Designing [ID] | 12 to 14 | Two papers - 100 Marks each |
| | DIPLOMA ENGINEERING SERVICES COURSES | | |
| 4 | Diploma Civil Engineering Services [DCES] | 2 to 8 & 14 – 15 | Four papers - 100 Marks each |
| 5 | Diploma Interior Design Practice [DIDP] | 12 to 14 & 17 | Three papers - 100 Marks each |

Minimum Passing - 35 Marks each paper.



INDIAN TECHNICAL EDUCATION SOCIETY, MUMBAI

CERTIFICATE COURSE CIVIL DRAUGHTSMAN [CD]

EXAM SCHEME: THEORY PAPER 100 MARKS – 3 HRS.

[CD – I / AD – I / DCES – I]

THEORY SYLLABUS

1. Introduction to Building Construction.

- ❖ Classification of Structure.
- ❖ Components of a building.

2. Introduction to Engineering material.

- ❖ Lime, Sand, Cement and Mortars etc.

3. Brick Masonry.

- ❖ Definition of brick, size of bricks, manufacturing of bricks, characteristics of good bricks.
- ❖ Terms used in Brick masonry, Principles of construction in Brick masonry, Bonds – English band, Flemish bond.
- ❖ Scaffolding, Types of Scaffolding.

4. Stone Masonry

- ❖ Terms used in Stone Masonry.
- ❖ Principles of Construction in stone masonry.
- ❖ Types of Stone Masonry.
- ❖ Comparison between Stone Masonry and Brick Masonry.

5. Foundation

- ❖ Definition of Foundation, Purpose of Foundation, Causes of Failure of Foundation.
- ❖ Formula for determining width and depth of foundation.
- ❖ Types of Foundation.
- ❖ Examination of ground, General Inspection of Soil and methods.

6. Dampness and It's prevention

- ❖ Definition of Dampness, Causes of dampness.
- ❖ Prevention of Dampness, Material used for D.P.C.

7. Floors.

- ❖ Definition, Types of Floors, Construction of Different types of flooring, skirting & dado.

8. Arches and Lintels

- ❖ Definition of Arches, Terms used in Arches, Types of Arches.
- ❖ Definition of Lintels, Types of Lintels.

9. Roofs

- ❖ Definition, Types of Roofs – Pitched Roof & Flat Roofs.
 - ❖ Terms used in Roof.
 - ❖ Types of Pitched Roofs.
 - ❖ Types of Roof covering.
 - ❖ Flat Roof.
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10. Stairs

- ❖ Definition, Terms used in Stairs, Types of Stairs, Requirement of good stairs.
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11. R.C.C.

- ❖ Definition, Material used in R.C.C.
 - ❖ Grade of Concrete, Water cement Ratio.
 - ❖ Working of Concrete – Slump Test.
 - ❖ Formwork.
 - ❖ Reinforcement Detailing in R.C.C. work.
 - ❖ Bar Bending Schedule. Cutting & Bending of Steel Reinforcement.
 - ❖ Study of various Diameters of Steel Reinforcement Bars and calculations of their weight per meter.
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12. Structural Steel work

- ❖ Types of Rivets, Advantages and Disadvantages of Riveting and welding.
 - ❖ Rolled steel sections.
 - ❖ Steel column, girder and beams.
 - ❖ Connection between columns and beams.
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13. Domestic Services

- ❖ Plumbing, Definition of Plumbing, Tools in Plumbing.
 - ❖ Sanitary Fittings.
 - ❖ Terms used in House plumbing, water supply system, House drainage System, Septic Tanks, Soak Pit, Sewers & Drains etc.
 - ❖ Domestic water supply & installation of water supply system of building.
 - ❖ 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, Intercepting traps Inspection chamber etc. Excreta Disposal & Unscrewed Areas.
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14. Units and Measurement.

- ❖ Conversation of Units, Area & Volume (Rectangle, Square, Parallelogram, Rhombus, Triangle, Circle)
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GUIDELINES FOR QUESTION PAPER SETTERS

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|--------------|--|---------------|
| Q. no.1 | Compulsory (Objective type). | 20 marks |
| Q. no.2 to 8 | Solve any five questions from Q. 2 to 8 (Subjective type). | 16 marks each |

The paper setter should take care that (as far as possible) entire syllabus is equally covered.



INDIAN TECHNICAL EDUCATION SOCIETY, MUMBAI

CIVIL DRAUGHTSMAN [CD]

EXAM SCHEME: DRAWING PAPER 100 MARKS – 3 HRS.

[CD – II / AD – II / DCES – II]

DRAWING PAPER SYLLABUS

1. Engineering Drawing, Introduction, Drawing is the language of Engineers, Drawing Instruments, Equipments and Materials.
2. Lettering Technique, Lines Lettering & Dimensioning, Types of lettering, lines and Dimensioning.
3. Different scales used in drawing (Plain & Isometric), concept of Representative factor.
4. Orthographic projection, planes of projection, First angle projection & Third angle projection.
5. Projection of lines, points & planes. Points in different quadrants, Lines parallel to one or both planes, Lines perpendicular to planes, Traces of planes, Types of planes, perpendicular and oblique planes.
6. Isometric Projection, Isometric axes, lines & planes, Isometric Projection of planes, Prisms, pyramids, To draw Isometric object from given views.
7. General Civil conventions; Meaning of F.S.I., built up area, carpet area, Rules for selecting different types of rooms & their sizes & floor heights.
8. Doors, Windows, Ventilators, Types, Parts of D / Ws, Sizes, Fixtures & fastenings used for different D / Ws, Sketches of D / W & ventilators & drawing details.
9. Plumbing accessories, types, Fitments & Sanitary symbols, plumbing symbols.
10. Electrical symbols, system of wiring, Types of wiring, layout diagrams.
11. Structural steel work drawing, Drawing of slabs, beams, columns, R.C.C., foundations, stairs.
12. R.C.C. details of Frame structures, Form work for column, beams, stairs, bar bending schedule.
13. General zoning regulations – Residential, Agriculture & Industrial.
14. To prepare plan, elevation & section from line drawing for single & double storied residential building drawing, Concept of site plan layout plan etc.

DRAWING SHEETS :

| SR. NO. | TOPICS | MIN. NO. OF SHEETS |
|---------|--|--------------------|
| 1 | Lines, Lettering, Dimensioning | 2 |
| 2 | Plain scales and Isometric scales | 1 |
| 3 | Orthographic Projection | 3 |
| 4 | Projection of Point and Line | 2 |
| 5 | Projection of Plane and Solid | 2 |
| 6 | Isometric Projection | 3 |
| 7 | R.C.C. Drawing of : 1. Column Footing 2. One way and Two way slab 3. Dog-legged Stair 4. Lintel and Chajja | 1 |
| 8 | Different types of Doors and Windows | 2 |
| 9 | Different types of Stair and Staircases | 1 |
| 10 | Line Plan of Plumbing work and Sanitary & Water supply work | 1 |
| 11 | Symbols of Materials, Sanitary and Water supply Symbols | 1 |
| 12 | Electrical symbols and Wiring layouts | 2 |
| 13 | Structural Steel Work : 1. King Roof Truss 2. Queen Roof Truss 3. lean to Roof | 3 |
| 14 | Complete set of Drawings for : 1. Small Office 2. Residential building 3. Residential and Double Storey building 4. Tracing of Drawings, Inking work and Ammonia Print outs. | 1 2 2 2 |
| 15 | * Preparation of a small Municipal submission drawing | 1 |
| | Total | 32 |

Note : Student should complete 8 sheets from point no. 1 to 6.

Student should complete 14 sheets from point no. 7 to 15.

***Only for classroom practice & should not be asked in exam paper**

GUIDELINES FOR QUESTION PAPER SETTERS

1. Q.1 Compulsory one problem to draw Plan, Elevation & Section – 40 marks.
2. Q.2 - Strictly on Drawing Work Sheets – 30 marks (10 each): Solve any Three out of Five (Should include one Municipal drawing)
3. Q.3 - Strictly on Drawing Work Sheets – 30 marks (10 each): Solve any Two out of Four
4. The Q. Paper should be in such a way that, a S.S.C. Student can solve in 4 hours.

SCHEME OF EXAMINATION : (CIVIL DRAUGHTSMAN)

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| Theory Paper – I | 3 hours | 100 Marks |
| Drawing Paper – II | 4 hours | 100 Marks |
| Sessional (Internal) | | 100 Marks |

Total **300 Marks**

