2.6 ENGINEERING DRAWING – II

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RATIONALE

Drawing is said to be the language of engineers and technicians. Reading and interpreting engineering drawing is their day-to-day responsibility. The course is aimed at developing basic graphic skills so as to enable them to use these skills in preparation of engineering drawings, their reading and interpretation SP 46 – 1988 should be followed

Note: 1. First angle projection is to be followed
2. Instructions relevant to various drawings may be given along with appropriate demonstration, before assigning drawing practice to the students

DETAILED CONTENTS

1. Detail and Assembly Drawing (2 sheets)

1.1 Principle and utility of detail and assembly drawings

1.2 Wooden joints i.e. corner mortice and tenon joint, Tee halving joint, Mitre faced corner joint, Tee bridle joint, Crossed wooden joint, Cogged joint, Dovetail joint, Through Mortice and Tenon joint

2. Screw threads and threaded fasteners (8 sheets)

2.1 Thread Terms and Nomenclature

2.1.1 Types of threads-External and Internal threads, Right and Left hand threads (Actual and Conventional representation), single and multiple start threads.

2.1.2 Different Forms of screw threads-V threads (B.S.W threads, B.A thread, American National and Metric thread), Square threads (square, Acme, Buttress and Knuckle thread)

2.2 Nuts and Bolts

2.2.1 Different views of hexagonal and square nuts and hexagonal headed bolt
2.2.2 Assembly of Hexagonal headed bolt and Hexagonal nut with washer.
2.2.3 Assembly of square headed bolt with hexagonal and with washer.

2.3 Locking Devices

2.3.1 Different types of locking devices-Lock nut, castle nut, split pin nut, locking plate, slotted nut and spring washer.
2.3.2 Foundations bolts-Rag bolt, Lewis bolt, curved bolt and eye bolt.

2.4 Drawing of various types of machine screw, set screw, studs and washers

3. Keys and Cotters (3 sheets)

3.1 Various types of keys and cotters and their practical application and preparation of drawing of various keys and cotters showing keys and cotters in position

3.2 Various types of joints (3 sheets)
- Spigot and socket joint
- Gib and cotter joint
- Knuckle joint

4. Rivets and Riveted Joints (4 sheets)

4.1 Types of general purpose-rivets heads (4 Sheets)
4.2 Caulking and fullering of riveted joints
4.3 Types of riveted joints
(i) Lap joint-Single riveted, double riveted (chain and zig-zag type)
(ii) Butt Joint-
(a) Single cover plate
(i) Single riveted joint
(ii) Double riveted joint (Chain and zig-zag type)
(b) Double cover plate
(i) Single riveted joint
(ii) Double riveted joint (Chain and zig-zag type)

5. Couplings (2 sheets)

5.1 Flange coupling (Protected and non-protected)

6. Symbols and Conventions (2 sheets)

6.1 Civil engineering sanitary fitting symbols
6.2 Electrical fitting symbols for domestic interior installations
6.3 Building plan drawing with electrical and civil engineering symbols

7. AUTO CAD (for practical and viva-voce only)

7.1 Concept of AutoCAD, Tool bars in AutoCAD, coordinate system, snap, grid, and ortho mode

7.2 Drawing commands – point, line, arc, circle, ellipse

7.3 Editing commands – scale, erase, copy, stretch, lengthen and explode

RECOMMENDED BOOKS

1. Elementary Engineering Drawing (in first angle projection) by ND Bhatt, Charotar Publishing House

2. A Text Book of Engineering Drawing by Surjit Singh Published by Dhanpat Rai and Co. Delhi

3. Engineering Drawing by PS Gill; published by SK kataria and Sons, New Delhi

4. Machine Drawing by RB Gupta published by Satya Prakashan, New Delhi.