

**CURRICULUM**

**FOR THE MODULE OF**

**Basic Electronics Module-I**  
**(For Newly Designed Apprenticeship Course)**

**UNDER**

**SKILL DEVELOPMENT INITIATIVE (SDI) SCHEME**

**Based on**

**MODULAR EMPLOYABLE SKILLS (MES)**



Government of India

**GOVERNMENT OF INDIA**  
**MINISTRY OF SKILL DEVELOPMENT AND ENTREPRENEURSHIP**  
**DIRECTORATE GENERAL OF TRAINING**

## **PREFACE**

1. The Basic Training under Block – I & Block - II are designated as module – I & module – II respectively.
2. The basic Modules (module – I & module – II) of the designated trades have been developed to fulfill the requirement of Basic Training under Apprenticeship Training.
3. Basic Module – I is of 03 months duration and after successful completion of the module, the trainee will be eligible for On Job Training of duration 09 months in industries to complete Block – I of Apprenticeship Training.
4. Basic Module – II is also of 03 months duration and candidate will be eligible to join the module – II only after successful completion of (03+09 months) training duration of Block – I.
5. The sequence of training should be such that Basic Module – II should be taken up after completion of Basic Module – I & 09 months of On Job Training for better understanding.
6. The courses are designed especially for Apprenticeship Training and NSQF compliance certificate in the specific trade will be issued only after successful completion of Basic Module – I & II and On Job Training of both the blocks.
7. Assessment of Basic module will be conducted as per the pattern of MES modules in practice. Separate certificate will be issued for each module after successful completion of course & clearing the assessment. Rebate of 03 months duration of Apprenticeship training period will be provided against each module for the period of basic training.

## CONTENTS

<b>Sl. No.</b>	<b>Topics</b>	<b>Page No.</b>
1.	<b>General information and course structure</b>	4
2.	<b>Syllabus of Professional Skills &amp; Professional Knowledge</b>	6
3.	<b>Details Syllabus of Core Skill</b>	10
4.	<b>Syllabus of Employability Skills</b>	12
5.	<b>List of trade committee members</b>	14
6.	<b>List of Tools and Equipments (Annexure – I)</b>	15

## **1. GENERAL INFORMATION AND COURSE STRUCTURE**

- |          |  |   |  |
|----------|--|---|--|
| <b>1</b> | <b>Name of the Module</b>  | : | <b>Basic Electronics Module-I</b>  |
| <b>2</b> | <b>MES Code No.</b>  | : | ELC 101  |
| <b>3</b> | <b>Duration of Modular Training</b>  | : | 520 hrs.   |
| <b>4</b> | <b>Entry Qualification</b>   | : | Passed 10 <sup>th</sup> Class under 10+2 system of Education or its equivalent |
| <b>5</b> | <b>Trainees per unit</b>   | : | 20   |
| <b>6</b> | <b>Power Norms</b>   | : | 4.04 KW for Workshop   |
| <b>7</b> | <b>Space Norms</b>   | : | 56 Sq.m.   |
| <b>8</b> | <b>Examination</b>   | : | The assessment will be held on completion of module.                           |
| <b>9</b> | <b>Instructor Qualification</b>  | : |  |
|          | <b>A) For trade</b>  | : |  |
| i)       | Degree/Diploma in Electronics/Electronics & Telecommunication/Electronics & Communication engineering from recognized university/Board with one/two year post qualification experience respectively in the relevant field. |   |  |
|          | <b>OR</b>  |   |  |
| ii)      | NTC/NAC in the trade with three year post qualification experience in the relevant field. Preference will be given to a candidate with Craft Instructor Certificate (CIC)  |   |  |

### **B) For Engineering Drawing and WSC :**

Degree/Diploma in Electronics/Electronics & Telecommunication/Electronics & Communication Engg. from recognized university/Board with one/two year post qualification experience respectively in the relevant field.

### **C) For Employability skills :**

i) MBA/BBA with two years experience or graduate in sociology/social welfare/Economics with two years experience and trained in Employability skill from DGET Institute.

And

Must have studied in English/Communication Skill and Basic Computer at 12<sup>th</sup> /diploma level

**OR**

ii) Existing Social Study Instructor duly trained in Employability Skill from DGET Institute.

## **10. Tools, Equipments & Machinery required : - As per Annexure – I**

**11. Distribution of training on Hourly basis:**

<b>Sl. No.</b>	<b>Broad components to be covered</b>	<b>Duration (in Hrs)</b>
1	<b>Syllabus of Professional Skills &amp; Professional Knowledge</b>	415
2	<b>SYLLABUS of CORE SKILL</b>	50
3	<b>Syllabus of EMPLOYABILITY SKILLS</b>	55
	Total	520

**12. Terminal Competency:** - After completion of the module the candidate will be eligible for On Job Training under newly designed Apprenticeship Training of Electronics Mechanic trade.

## **2. SYLLABUS OF PROFESSIONAL SKILLS & PROFESSIONAL KNOWLEDGE**

### **FOR THE MODULE OF BASIC ELECTRONICS MODULE- I (Module Code No. ELC -----)**

<b>Week No.</b>	<b>Professional Skills</b>	<b>Professional Knowledge</b>
1.	<p>Importance of trade training, List of tools &amp; Machinery used in the trade.</p> <p>Health &amp; Safety: Introduction to safety equipments and their uses. Introduction of first aid, operation of Electrical mains.</p> <p><b>Occupational Safety &amp; Health</b></p> <p><b>Importance of housekeeping &amp; good shop floor practices.</b></p> <p>Basic safety introduction,</p> <p>Personal protective Equipments(PPE):-</p> <p>Use of Fire extinguishers.</p>	<p>Importance of safety and general precautions observed in the in the industry/shop floor. All necessary guidance to be provided to the new comers to become familiar with the working of Industrial Training Institute system including stores procedures. <b>Soft Skills: its importance and Job area after completion of training.</b></p> <p>Introduction of First aid. Operation of electrical mains. Introduction of PPEs.</p> <p>Introduction to 5S concept &amp; its application.</p> <p>Response to emergencies eg; power failure, fire, and system failure.</p>
2.	<p><b><u>Hand Tools and their uses</u></b></p> <ul style="list-style-type: none"> <li>• Demonstration and uses of hand tools- screw drivers, pliers, tweezers, tester, wire stripper, electrician knife, steel rule, scriber, punches, hack saw, hammer, files, bench vice and drilling machine.</li> <li>• Simple mechanical fixtures</li> <li>• Identification of types of screws, bolts, nuts, washers, rivets, clamps, connectors</li> <li>• Fix screws of different sizes on wooden boards</li> <li>• Cutting of wooden blocks using hand/hack saw</li> <li>• Simple fitting practice and drilling practice</li> </ul>	<p>Identification, specifications, uses and maintenance of commonly used hand tools.</p>
3.	<p><b>Basics of AC and Electrical Cables</b></p> <ul style="list-style-type: none"> <li>• Identify the Phase, Neutral and Earth on power Socket.</li> <li>• Use a Tester to monitor AC power.</li> <li>• Measure the voltage between phase and</li> </ul>	<p>Basic terms such as electric charges, Potential difference, Voltage, Current, Resistance. Basics of AC &amp; DC. Terms such as +ve cycle, -ve cycle, Frequency, Time period, RMS, Peak, P-P, Instantaneous value. Single phase</p>

	<p>ground and rectify earthing.</p> <ul style="list-style-type: none"> <li>Identify and test different AC mains cables.</li> <li>Skin the electrical wires /cables using the wire stripper and cutter.</li> <li>Prepare the mains cable for termination.</li> </ul>	<p>and Three phase supply. Terms like Line and Phase voltage/ currents. Insulators, conductors and semiconductor properties. Different type of electrical cables and their Specifications.</p> <p>Types of wires &amp; cables, standard wire gauge(SWG).</p> <p>Classification of cables according to gauge(core size), number of conductors, material, insulation strength, flexibility etc.</p>
4.	<p><b><u>AC &amp; DC measurements</u></b></p> <ul style="list-style-type: none"> <li>Identify the meter for measuring AC &amp; DC parameters</li> <li>Use the multi meter to measure the various functions ( AC V, DC V, DC I, AC I, R)</li> <li>Identify the different controls on the CRO front panel and observe the function of each controls</li> <li>Identify the different controls on the function generator front panel and observe the function of each controls</li> <li>Connect the function generator to CRO and observe the different wave forms</li> </ul>	<p>Introduction to electrical measuring instruments, Importance of meter, classification of meters, forces necessary to work a meter. MC and MI meter, range extension, need of calibration, characteristics of meters and errors in meters. Multi meter, use of meters in different circuits. Care and maintenance of meters. Use of CRO, Function generator, LCR meter</p>
5.	<p><b><u>Soldering &amp; De-soldering and switches</u></b></p> <ul style="list-style-type: none"> <li>Identify different types of soldering guns and practice soldering of different electronic active and passive components and IC bases on lug boards and PCBs</li> <li>Join the broken PCB track and test</li> <li>Demonstrate soldering and de-soldering using soldering and de-soldering stations</li> <li>Identify and use SPST, SPDT, DPST, DPDT, tumbler, push button, toggle, piano switches used in electronic industries</li> </ul>	<p>Different types of soldering guns, related to Temperature and wattages, types of tips. Solder materials and their grading. Use of flux and other materials. Selection of a soldering gun for specific requirement.</p> <p>Soldering and De-soldering stations and their specifications.</p> <p>Different switches and their specification, uses.</p>
6-7	<p><b><u>Passive Components</u></b></p> <ul style="list-style-type: none"> <li>Identify the different types of resistors</li> <li>Measure the resistor values using colour code and verify the reading by measuring in multi meter</li> <li>Verify ohms law</li> <li>Measure the resistance, Voltage, Current through series and parallel connected</li> </ul>	<p>Ohm's law and its variables. Resistor-definition, types of resistors, their construction &amp; specific use, color-coding, power rating. Equivalent Resistance of series parallel circuits. Distribution of V &amp; I in series parallel circuits. KVL&amp; KCL with applications.</p>

	<p>networks using multi meter</p> <ul style="list-style-type: none"> <li>• Identify different inductors</li> <li>• Identify the different capacitors and measure capacitance of various capacitors using LCR meter</li> <li>• Dismantle and identify the different parts of a relay.</li> <li>• Connect a relay in a circuit and test for its working</li> </ul>	<p>Principles of induction, inductive reactance, Capacitance and Capacitive Reactance,</p> <p>Impedance. Types of capacitors, construction, specifications and applications. Dielectric constant. Significance of Series parallel connection of capacitors. Electromagnetic Relays, types, construction, specifications- coil voltage and contact current capacity.</p>
8-10	<p><b><u>Computer Hardware, OS, MS office Networking</u></b></p> <ul style="list-style-type: none"> <li>• Identification of various indicators, Connectors, ports on the computer cabinet</li> <li>• Identify drives and their capacity.</li> <li>• Identify various connectors and cables inside the cabinet &amp; Identify connections to rear side and front panel of the cabinet</li> <li>• Identify various parts of the system unit and motherboard</li> <li>• Configuring and troubleshooting display problems</li> <li>• Practice various features of OS</li> <li>• Install a Printer driver software and test for print outs</li> <li>• Install MS office software</li> <li>• Explore different Menu/Tool/ Format/status bars of MS word and practice the options: Editing the text, saving the text, changing the font and size of text.</li> <li>• Prepare a power point presentation on any three known topics with various design features</li> <li>• Invoke excel sheet from MS WORD and vice versa</li> <li>• Identify the cables and network components.</li> <li>• Making UTP cross cables and testing, Making straight cables and testing, Making cable layout drawing</li> </ul>	<p>Basic blocks of a computer, Hardware and software, I/O devices, keyboard, types of mouse and their working, Different types of printers, their function and inter-connection and their advantages HDD, CDD, DVD. Various ports in the computer. POST Booting concept.</p>
11-12	<p><b><u>Electronic circuit simulation software</u></b></p> <ul style="list-style-type: none"> <li>• Prepare simple digital and electronic circuits using the software</li> </ul>	<p>Study the library components available in the circuit simulation software. Various resources</p>



	<ul style="list-style-type: none"> <li>• Simulate and test the prepared digital and analog circuits</li> <li>• Convert the prepared circuit into a layout diagram.</li> <li>• Explore various troubleshooting and fault finding resources provided in the simulation software.</li> </ul>	of the software.
13	<b>Assessment / Examination</b>	

### **3. DETAIL SYLLABUS OF CORE SKILL**

Topic No.	a) Engineering Drawing	Duration (in hours)	b) Workshop Science & Calculation	Duration (in hours)
		<b>30</b>		<b>20</b>
1	<b>Engineering Drawing:</b> Introduction and its importance <ul style="list-style-type: none"> <li>- Viewing of engineering drawing sheets.</li> </ul> Method of Folding of printed Drawing Sheet as per BIS SP:46-2003 Drawing Instruments : their Standard and uses <ul style="list-style-type: none"> <li>- Drawing board, T-Square, Drafter (Drafting M/c), Set Squares, Protractor, Drawing Instrument Box (Compass, Dividers, Scale, Diagonal Scales etc.), Pencils of different Grades, Drawing pins / Clips.</li> </ul>		<b>Unit:</b> Systems of unit- FPS, CGS, MKS/SI unit, unit of length, Mass and time, Conversion of units.	
2	<b>Lines :</b> <ul style="list-style-type: none"> <li>- Definition, types and applications in Drawing as per BIS SP:46-2003</li> <li>- Classification of lines (Hidden, centre, construction, Extension, Dimension, Section)</li> <li>- Drawing lines of given length (Straight, curved)</li> <li>- Drawing of parallel lines, perpendicular line</li> <li>- Methods of Division of line segment</li> </ul>		<b>Fractions &amp; Simplification:</b> Fractions, Decimal fraction, Multiplication and Division of Fractions and Decimals, conversion of Fraction to Decimal and vice versa. Simple problems Simplification using BODMAS.	
3	<b>Drawing of Geometrical Figures:</b> Definition, nomenclature and practice of - <ul style="list-style-type: none"> <li>- Angle: Measurement and its types, method of bisecting.</li> <li>- Triangle -different types</li> <li>- Rectangle, Square, Rhombus, Parallelogram.</li> <li>- Circle and its elements.</li> </ul>		<b>Square Root :</b> Square and Square Root, method of finding out square roots, Simple problem using calculator	

4	<b>Lettering and Numbering</b> as per BIS SP46-2003: - Single Stroke, Double Stroke, inclined, Upper case and Lower case.		<b>Ratio &amp; Proportion:</b> Simple calculation on related problems.	
5	<b>Free Hand sketch:</b> Hand tools and measuring instruments used in electronics mechanics trades		<b>Percentage:</b> Introduction, Simple calculation. Changing percentage to decimal and fraction and vice-versa.	
6	<b>Free hand drawing :</b> - Lines, polygons, ellipse, etc. - geometrical figures and blocks with dimension . - Transferring measurement from the given object to the free hand sketches.		<b>Material Science :</b> Properties - Physical & Mechanical, Types – Ferrous & Non-Ferrous, difference between Ferrous and Non-Ferrous metals, introduction of Iron, Cast Iron, Wrought Iron, Steel, difference between Iron and Steel, Alloy steel, carbon steel, stainless steel, Non-Ferrous metals, Non-Ferrous Alloys.	

#### **4. SYLLABUS OF EMPLOYABILITY SKILLS**

<b>Topic No.</b>	<b>Topic</b>	<b>Duration (in hours)</b>
	<b>English Literacy</b>	<b>20</b>
<b>1</b>	<b>Pronunciation :</b> Accentuation (mode of pronunciation) on simple words, Diction (use of word and speech)	
<b>2</b>	<b>Functional Grammar</b> Transformation of sentences, Voice change, Change of tense, Spellings.	
<b>3</b>	<b>Reading</b> Reading and understanding simple sentences about self, work and environment	
<b>4</b>	<b>Writing</b> Construction of simple sentences Writing simple English	
<b>5</b>	<b>Speaking / Spoken English</b> Speaking with preparation on self, on family, on friends/ classmates, on know, picture reading gain confidence through role-playing and discussions on current happening job description, asking about someone's job habitual actions. Cardinal (fundamental) numbers ordinal numbers. Taking messages, passing messages on and filling in message forms Greeting and introductions office hospitality, Resumes or curriculum vita essential parts, letters of application reference to previous communication.	
	<b>I.T. Literacy</b>	<b>20</b>
<b>1</b>	<b>Basics of Computer</b> Introduction, Computer and its applications, Hardware and peripherals, Switching on-Starting and shutting down of computer.	
<b>2</b>	<b>Computer Operating System</b> Basics of Operating System, WINDOWS, The user interface of Windows OS, Create, Copy, Move and delete Files and Folders, Use of External memory like pen drive, CD, DVD etc, Use of Common applications.	
<b>3</b>	<b>Word processing and Worksheet</b> Basic operating of Word Processing, Creating, opening and closing Documents, use of shortcuts, Creating and Editing of Text, Formatting the Text, Insertion & creation of Tables. Printing document. Basics of Excel worksheet, understanding basic commands, creating simple worksheets, understanding sample worksheets, use of simple formulas and functions, Printing of simple excel sheets	
<b>4</b>	<b>Computer Networking and INTERNET</b> Basic of computer Networks (using real life examples), Definitions of Local Area Network (LAN), Wide Area Network (WAN), Internet, Concept of Internet (Network of Networks), Meaning of World Wide Web (WWW), Web Browser, Web Site, Web page and	

	<p>Search Engines. Accessing the Internet using Web Browser, Downloading and Printing Web Pages, Opening an email account and use of email. Social media sites and its implication.</p> <p>Information Security and antivirus tools, Do's and Don'ts in Information Security, Awareness of IT - ACT, types of cyber crimes.</p>	
	<b>Communication Skill</b>	<b>15</b>
<b>1</b>	<p><b>Introduction to Communication Skills</b></p> <p>Communication and its importance</p> <p>Principles of Effective communication</p> <p>Types of communication - verbal, non verbal, written, email, talking on phone.</p> <p>Non verbal communication -characteristics, components-Para-language</p> <p>Body - language</p> <p>Barriers to communication and dealing with barriers.</p> <p>Handling nervousness/ discomfort.</p>	
<b>2</b>	<p><b>Listening Skills</b></p> <p>Listening-hearing and listening, effective listening, barriers to effective listening guidelines for effective listening.</p> <p>Triple- A Listening - Attitude, Attention &amp; Adjustment.</p> <p>Active Listening Skills.</p>	
<b>3</b>	<p><b>Motivational Training</b></p> <p>Characteristics Essential to Achieving Success</p> <p>The Power of Positive Attitude</p> <p>Self awareness</p> <p>Importance of Commitment</p> <p>Ethics and Values</p> <p>Ways to Motivate Oneself</p> <p>Personal Goal setting and Employability Planning.</p>	
<b>4</b>	<p><b>Facing Interviews</b></p> <p>Manners, Etiquettes, Dress code for an interview</p> <p>Do's &amp; Don'ts for an interview</p>	
<b>5</b>	<p><b>Behavioral Skills</b></p> <p>Problem Solving</p> <p>Confidence Building</p> <p>Attitude</p>	

### **5. LIST OF TRADE COMMITTEE MEMBERS**

<b>Sl. No.</b>	<b>Name &amp; Designation</b>	<b>Organization</b>	<b>Expert Group Designation</b>
<b>1.</b>	Sh. Jayant Krishna, Principal Consultant	Tata Consultancy Services	Chairman
<b>2.</b>	Sh. TC Saravanabava, DDG(AT)	MSDE	Member
<b>3.</b>	Smt. Sandhya Salwan Director (AT)	MSDE	Member
<b>4.</b>	Sh. Sathya Shankar B.P. Director	CSTARI, Kolkata	Member
<b>5.</b>	C S Murthy, DDT	ATI-EPI, Hyderabad	Member
<b>6.</b>	L K Mukherjee, DDT	CSTARI, Kolkatta	Member
<b>7.</b>	Mr. Jinesh Kadaval Purayil Asst. Manager Training & Development	M/s. BOSCH, Bangalore	Member
<b>8.</b>	R Malathi, T O	RVTI(W), Bengaluru	Member
<b>9.</b>	Ashwini Koli, VI	RVTI(W), Bengaluru	Member
<b>10.</b>	Rupa Chakraborty, Instructor	DIT, West Bengal	Member
<b>11.</b>	Keya Basu( Chanda),Instructor	DIT, West Bengal	Member

## **Annexure - I**

### **MODULE: Basic Electronics Module –I**

#### **INFRASTRUCTURE FOR PROFESIONAL SKILL**

#### **LIST OF TOOLS & EQUIPMENTS FOR 20 TRAINEES**

##### **A. TRAINEES TOOL KIT: -**

<b>Sl. No.</b>	<b>Names of the Items</b>	<b>Quantity (Indicative)</b>
1.	Connecting screwdriver 100 mm	10 Nos
2.	Neon tester 500 V.	6 Nos
3.	Screw driver set (set of 5 )	10 Nos
4.	Insulated combination pliers 150 mm	6 Nos
5.	Insulated side cutting pliers 150 mm	8 Nos
6.	Long nose pliers 150 mm	6 Nos
7.	Soldering iron 25 W. 240 V.	10 Nos
8.	Electrician knife	6 Nos
9.	Tweezers 100mm	10 Nos
10.	Digital Multimeter (3 ½ digit)	10 Nos
11.	Soldering Iron Changeable bits 10 W	6 Nos
12.	De- soldering pump	10 Nos

## **B. Instruments & General Shop outfit**

<b>Sl. No</b>	<b>Name of the items</b>	<b>Quantity (Indicative)</b>
1.	Steel rule 300mm	4 Nos
2.	Steel measuring tape-3 m	4 Nos
3.	Tools makers vice 100mm (clamp)	1 Nos
4.	Tools maker vice 50mm (clamp)	1 Nos
5.	Crimping tool (pliers)	2 Nos
6.	Magneto spanner set	2 Nos
7.	File flat 200mm bastard	2 Nos
8.	File flat 200mm second cut	2 Nos
9.	File flat 200mm smooth	2Nos
10.	100mm flat pliers	4 Nos
11.	100mm round Nose pliers	4 Nos
12.	Scriber straight 150mm	2 Nos
13.	Hammer ball pen 0.5Kg	1 No
14.	Allen key set (set of 9)	1 No
15.	Tubular box spanner (set of 6Nos)	1 set
16.	Magnifying lenses 75mm	2 Nos
17.	Continuity tester	6 Nos
18.	Hacksaw frame adjustable	2 Nos
19.	Cold chisel 20mm	1 No
20.	Scissors 200mm	1 No
21.	Handsaw 450mm	1 No
22.	Hand Drill Machine	2 Nos



23.	First aid kit	1 No
24.	Fire Extinguisher	2 Nos
25.	Bench Vice	1 No
26.	Dual DC regulated power supply 30-0-30 V, 2 Amps	4 Nos
27.	DC regulated variable power supply 0-24 V, 1Amp	2 Nos
28.	LCR meter (Digital)	1 No
29.	CRO Dual Trace 20 MHz (component testing facilities)	2 Nos
30.	Signal Generator, 0-100 KHz	2 Nos
31.	Analog multimeter	4 Nos
32.	Function generator (Triangular, square and sine wave)	2 Nos
33.	Dimmer start 3 Amps	2 Nos
34.	Rheostats various values and ratings	2 Nos
35	Computers in the assembled form (including cabinet, motherboards, HDD, DVD, SMPS, Monitor, KB, Mouse, LAN card, Blu-Ray drive and player), MS Office education version.	4 Nos
36	Laptops latest configuration	1 No
37	Laser jet Printer	1 No
39	INTERNET BROADBAND CONNECTION	1 No
40	Electronic circuit simulation software with 6 user licenses	1 No
41	Different types of Analog electronic components, general purpose PCBs, bread board	As required

**C.WORKSHOP FURNITURE:**

<b>Sl.No.</b>	<b>Name of the items</b>	<b>Quantity (Indicative)</b>
1	Instructor's table	1 No
2	Instructor's chair	2 Nos
3	Metal Rack, 100cm x 150cm x 45cm	4 Nos
4	Lockers with 16 drawers standard size	2 Nos
5	Steel Almirah, 2.5 m x 1.20 m x 0.5 m	2 Nos
6	Black board/white board	1 No

1

## **INFRASTRUCTURE FOR CORE & EMPLOYABILITY SKILL**

1) **Space Norms** : 45 Sq. m.(For Engineering Drawing)

2) **Infrastructure:**

**A : TRAINEES TOOL KIT:-**

<b>Sl. No.</b>	<b>Name of the items</b>	<b>Quantity (indicative)</b>
1.	Draughtsman drawing instrument box	20 sets
2.	Set square celluloid 45 <sup>0</sup> (250 X 1.5 mm)	20 sets
3.	Set square celluloid 30 <sup>0</sup> -60 <sup>0</sup> (250 X 1.5 mm)	20 sets
4.	Mini drafter	20 sets
5.	Drawing board (700mm x500 mm) IS: 1444	20 sets

### **B : FURNITURE REQUIRED**

<b>Sl. No.</b>	<b>Name of the items</b>	<b>Quantity (indicative)</b>
1	Drawing Board	20 Nos.
2	Models : Solid & cut section	As required
3	Drawing Table for trainees	As required
4	Stool for trainees	As required
5	Cupboard (big)	01 No.
6	White Board (size: 8ft. x 4ft.)	01 No.
7	Trainer's Table	01 No.
8	Trainer's Chair	01 No.