

Syllabus for Rural water supply Plumber & Sanitary work Assistant, V2

Course Name	Rural water supply Plumber & Sanitary work Assistant, V2
Sector	Plumbing
Course Code	STC-PLM/2021/3001, V2
Level	3
Occupation	Rural water supply Plumber & Sanitary work Assistant
Job Description	Fittings and fixing of various water supply and sanitary work components of any private, public building/house under the supervision of the Sr. plumber/Supervisor (plumber).
Course Duration	Total Duration 390 Hrs (T-90, P-180, OJT-60 and ES-60)
Trainees' Entry Qualification	Class 8 pass and pursuing continuous regular schooling, OR Class 8 Pass with 1 year experience, OR Class 10 Pass OR Previous relevant qualification of NSQF Level 2 with 1 yr experience
Trainers Qualification	In Rural water supply Plumber & Sanitary work Assistant, BE/BTECH in Civil Engineering with 1 year experience OR Diploma in Civil Engineering with 2 years experience OR ITI in Relevant trade with 5 years experience.

Structure of Course:

Module No.	Outcome	Theory (Hrs)	Practical (Hrs)	Total (Hrs) [Multiple of 30]
1	Apply Safe Working Practices	10	20	30
2	Explain plumbing system components	10	20	30
3	Interpret diagrams and drawings used for plumbing work	10	20	30
4	Identify different tools for Plumbing	10	20	30
5	Identify different Plumbing Material and Pipes	10	20	30
6	Identify measurements and Symbols used in Plumbing	10	20	30
7	Make Capable to use pipe fittings, joints, bends, different pipe joining tools for distribution of water supply	10	20	30
8	Identify different items and in house drainage, sanitary installation	10	20	30
9	Troubleshoot problems in plumbing system	10	20	30
10	Work in real job situation with special emphasis on basic safety and hazards in this domain.	0	60	60
11	Employability Skills- 60 hrs.	60		60
	TOTAL:	150	240	390

SYLLABUS

Module No 1: Apply Safe Working Practices

Outcome: Apply Safe Working Practices

Theory content:

- Use the appropriate tools required for the specific work or job
- Ensure that the necessary protective equipment are available
- Do not apply excessive pressure or force
- Use or wear safety gear (helmet, gloves, goggles, safety shoes, ear plugs, etc.)

Practical content:

- Demonstrate Knowledge of Safe working practices on construction sites
- Carry out safe working practices on construction sites
- Identify hazards and procedure to avoid accidents at work sites
- Taking undue risk during execution of a job at a construction site should be avoided
- In any construction site where work is in progress, put up notice for outsiders to avoid the area until the work is completed

Tools & Equipment needed: First Aid box, Different types of fire extinguishers, PPE kits, Safety charts

Module No 2: Explain plumbing system components

Outcome: Explain plumbing system components

Theory content:

- Introduction-plumbing and sanitary system, A plumber's job role
- Components of plumbing system
- Standard plumbing and sanitary material, as per the Bureau of Indian Standards (BIS)

Practical content:

- Identify the plumbing items fitted in school and house
- Identify the material used in plumbing fittings and fixtures
- Make a list of the identified plumbing items

Tools & Equipment needed: Rule Steel, Rule Wooden 4 fold, Hacksaw Frame adjustable, Scriber, Surface plate, Marking Table, Combination set, Hand Vice, Jaw, etc.

Module No 3: Interpret diagrams and drawings used for plumbing work

Outcome: Interpret diagrams and drawings used for plumbing work

Theory content

- Describe the convention used in drawings of Mechanical components and building structures etc.
- Identify mechanical components and their specification from drawing
- Identify the stages of construction at which the installation of pipe line

Practical content:

- Concept of plan, elevation, side view and sectional view of civil engineering structure
- Draw free hand mechanical sketches of the components
- Identify fabrication items

Tools & Equipment needed: Hacksaw Frame adjustable, Centre punch, Hammer ball peen, Surface plate, Marking Table, 'V' Blocks with clamps, etc

Module No 4: Identify different tools for Plumbing

Outcome: Identify different tools for Plumbing

Theory content:

- The major tools used in plumbing-
 1. Holding tools
 2. Fitting tools
 3. Cutting tools
 4. Pipe bending tools

Practical content:

- Collect the plumbing tools available in your classroom
- Draw figures of the plumbing tools and label them
- Collect the masonry tools available in your classroom
- Draw figures of the masonry tools and label them

Tools & Equipment needed:

Hacksaw Frame adjustable, Scriber, Centre punch, Chisel Cold, flat, Level spirit wooden, Plumb bob, Trowel, Stillson wrench, Screw Driver, Cutting pliers, Snip bend, etc.

Module No 5: Identify different Plumbing Material and Pipes

Outcome: Identify different Plumbing Material and Pipes

Theory content:

- Sealing Material:
Thread Seal Tape, Plumber's Putty, Sealing Adhesives
- Plumbing Pipes-
Types of plumbing pipes-advantages, Precautions

1. Cast Iron (CI) pipes, 2. Ductile iron pipes, 3. Steel pipes, 4. Galvanized Iron (GI) pipes, 5. Copper pipes
6. Asbestos Cement (AC) pipes, 7. Concrete pipes
8. Stone ware pipes, 9. PVC pipes

Practical content:

- Collect the plumbing material from a shop
- Identify the purpose of this material
- Identify the plumbing pipes in a shop

Tools & Equipment needed:

Hacksaw Frame adjustable, Scriber, Centre punch, Chisel Cold, flat, Level spirit wooden, Plumb bob, Trowel, Stillson wrench, Screw Driver, Cutting pliers, Snip bend, Wooden Mallet small, Surface plate, Marking Table, 'V' Blocks with clamps, Pipe bender(Hydraulic type), Hammering drilling machine, Pipe bender, manually operated, Chain :pipe wrench, Stillson pattern pipe wrenches, Pipe vice, etc.

Module No 6: Identify measurements and Symbols used in Plumbing

Outcome: Identify measurements and Symbols used in Plumbing

Theory Content:

- Introduce Measurement of Length, Measurement of Weight, Length Conversion, Measurement of Volume, Measurement of Density, Measurement of Pressure, Comprehensive Conversion
- Identify different types of measurement tools
- Identify different types of plumbing symbols and their uses

Practical Content:

- Measure the length, width and height of a room
- Measure the weight of a brick and cement bag
- Draw the plumbing symbols

Tools & Equipment needed:

Hacksaw Frame adjustable, Hammer ball peen, File flat rough, Surface plate, Marking Table, Scribing Block, Universal, Combination set, etc.

Module No 7: Make capable to use pipe fittings, joints, bends, and different pipe joining tools for distribution of water supply

Outcome: Make capable to use pipe fittings, joints, bends, and different pipe joining tools for distribution of water supply

Theory Content:

- Introduce Pipe Fittings
- Identify the type of Pipe Fittings
- Install and maintain different Electric pumps

Practical Content:

- Identify the fitting items available in the market
- Draw figures of the various types of bends
- Identify the components
- Join the pipe with the help of proper pipe joining tools
- Draw the figure of the joints

Tools & Equipment needed:

Hacksaw Frame adjustable, Scriber, Centre punch, Chisel Cold, flat, Level spirit wooden, Plumb bob, Trowel, Stillson wrench, Screw Driver, Cutting pliers, Snip bend, Wooden Mallet small, Surface plate, Marking Table, 'V' Blocks with clamps, Pipe bender(Hydraulic type), Hammering drilling machine, Pipe bender, manually operated, Chain :pipe wrench, Stillson pattern pipe wrenches, Pipe vice, Electric PPR pipe welding machine, Metal rack, etc.

Module No 8: Identify different items and in house drainage, sanitary installation

Outcome: Identify different items and in house drainage, sanitary installation

Theory Content:

- Install and conveniences of House drainage, and domestic sanitary
- Make capable house sewer connection

Practical Content:

- Identify the drainage, sanitary installations and conveniences items fitted in the school and house
- Identify the material used in sanitary fittings, plumbing fittings and fixtures
- Identify the sanitary items available in the market
- Draw figures of the various types of sanitary items

Tools & Equipment needed:

Hacksaw Frame adjustable, Scriber, Centre punch, Chisel Cold, flat, Level spirit wooden, Plumb bob, Trowel, Stillson wrench, Screw Driver, Cutting pliers, Snip bend, Wooden Mallet small, Surface plate, Marking Table, 'V' Blocks with clamps, Pipe bender(Hydraulic type), Hammering drilling machine, Pipe bender, manually operated, Chain :pipe wrench, Stillson pattern pipe wrenches, Pipe vice, Electric PPR pipe welding machine, Metal rack, etc.

Module No 9: Troubleshoot problems in plumbing system

Outcome: Troubleshoot problems in plumbing system

Theory Content:

- Significance of the good customer and good service to an organization
- Methods of rectification and modification and costing should be done and communicated

Practical Content:

- Identify causes for and damage in plumbing system
- Refurbishing and maintaining water supply systems, sanitary fittings, and conducting tests to ensure proper functionality

Tools & Equipment needed:

Water meter, working bench, Chain :pipe wrench, Stillson pattern pipe wrenches, Pipe stock and dies complete with stocks, bushing, bushing holders, Taps and wrenches sizes covered, to suit pipes, Scribing gauge, Blow lamp, Washer cutter, etc.

Module No.- 10: OJT

Outcome: Work in real job situation with special emphasis on basic safety and hazards in this domain

Practical Content:

Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor for **60 Hours.**)

Module No - 8: Employability Skills (60 Hrs)

Employability Skills (60 hours)
Model Curriculum

Module Summary:

S. No	Module Name	Duration (hours)	Assessment Marks
1.	Introduction to Employability Skills	1.5	2
2.	Constitutional values - Citizenship	1.5	2
3.	Becoming a Professional in the 21st Century	2.5	6
4.	Basic English Skills	10	6
5.	Career Development & Goal Setting	2	3
6.	Communication Skills	5	4
7.	Diversity & Inclusion	2.5	2
8.	Financial and Legal Literacy	5	5
9.	Essential Digital Skills	10	8
10.	Entrepreneurship	7	4
11.	Customer Service	5	3
12.	Getting Ready for Apprenticeship & Jobs	8	5
	Total	60	50

Key Learning Outcomes**Introduction to Employability Skills Duration: 1.5 Hours**

After completing this programme, participants will be able to:

1. Discuss the Employability Skills required for jobs in various industries
2. List different learning and employability related GOI and private portals and their usage

Constitutional values - Citizenship Duration: 1.5 Hours

3. Explain the constitutional values, including civic rights and duties, citizenship, responsibility towards society and personal values and ethics such as honesty, integrity, caring and respecting others that are required to become a responsible citizen
4. Show how to practice different environmentally sustainable practices.

Becoming a Professional in the 21st Century Duration: 2.5 Hours

5. Discuss importance of relevant 21st century skills.

6. Exhibit 21st century skills like Self-Awareness, Behavior Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn etc. in personal or professional life.
7. Describe the benefits of continuous learning.

Basic English Skills Duration: 10 Hours

8. Show how to use basic English sentences for everyday conversation in different contexts, in person and over the telephone
9. Read and interpret text written in basic English
10. Write a short note/paragraph / letter/e -mail using basic English

Career Development & Goal Setting Duration: 2 Hours

11. Create a career development plan with well-defined short- and long-term goals

Communication Skills Duration: 5 Hours

12. Demonstrate how to communicate effectively using verbal and nonverbal communication etiquette.
13. Explain the importance of active listening for effective communication
14. Discuss the significance of working collaboratively with others in a team

Diversity & Inclusion Duration: 2.5 Hours

15. Demonstrate how to behave, communicate, and conduct oneself appropriately with all genders and PwD
16. Discuss the significance of escalating sexual harassment issues as per POSH act.

Financial and Legal Literacy Duration: 5 Hours

17. Outline the importance of selecting the right financial institution, product, and service
18. Demonstrate how to carry out offline and online financial transactions, safely and securely
19. List the common components of salary and compute income, expenditure, taxes, investments etc.
20. Discuss the legal rights, laws, and aids

Essential Digital Skills Duration: 10 Hours

21. Describe the role of digital technology in today's life
22. Demonstrate how to operate digital devices and use the associated applications and features, safely and securely
23. Discuss the significance of displaying responsible online behavior while browsing, using various social media platforms, e-mails, etc., safely and securely
24. Create sample word documents, excel sheets and presentations using basic features
25. utilize virtual collaboration tools to work effectively

Entrepreneurship Duration: 7 Hours

26. Explain the types of entrepreneurship and enterprises
27. Discuss how to identify opportunities for potential business, sources of funding and associated financial and legal risks with its mitigation plan
28. Describe the 4Ps of Marketing-Product, Price, Place and Promotion and apply them as per requirement
29. Create a sample business plan, for the selected business opportunity

Customer Service Duration: 5 Hours

30. Describe the significance of analyzing different types and needs of customers
31. Explain the significance of identifying customer needs and responding to them in a professional manner.
32. Discuss the significance of maintaining hygiene and dressing appropriately

Getting Ready for apprenticeship & Jobs Duration: 8 Hours

33. Create a professional Curriculum Vitae (CV)
34. Use various offline and online job search sources such as employment exchanges, recruitment agencies, and job portals respectively
35. Discuss the significance of maintaining hygiene and confidence during an interview
36. Perform a mock interview
37. List the steps for searching and registering for apprenticeship opportunities

Learning Outcome–Assessment Criteria

Outcomes to be assessed/ NOS to be assessed	Assessment criteria for the outcome
1. Maintain safety at the work site.	After completion of this module students will be able to 1.1 Follow and maintain procedures to achieve a safe working environment in line with occupational health and safety regulations and requirements and according to site policy.
	1.2 Identify and take necessary precautions on fire and safety .
	1.3 Identify, handle and store / dispose dangerous goods and substances according to safety regulations and requirements.
	1.4 Report supervisor/ Competent of authority in the event of accident or sickness of any staff and record accident details correctly. according to site accident/injury procedures.
	1.5 Identify and observe site evacuation procedures according to site policy.
	1.6 Identify Personal Productive Equipment (PPE) and use the same as per related working environment.
	1.7 Identify basic first aid and use them under different circumstances.
	1.8 Identify different fire extinguisher and use the same as per requirement.
2. Understand plumbing system components.	After completion of this module students will be able to 2.1 Explain the role of plumber and its importance-Plumbing cycle- plumbing and sanitary system
	2.2 Explain- What is Plumbing? What is Sanitary Work?
	2.3. Explain Components of plumbing system.
	2.4 Name Standard plumbing and sanitary material, as per the Bureau of Indian Standards (BIS).
	2.5 Perform maintenance of all the instruments and tools related to plumbing.
	2.6 Explain Points to be consider before starting the work by a plumber
3. Interpret diagrams and drawings used for plumbing work.	After completion of this module students will be able to 3.1 Demonstrate the Concept of plan, elevation, side view and sectional view of civil engineering structure
	3.2 Draw free hand mechanical sketches of the major tools used in plumbing
	3.3 Identify water supply and Sanitary fitting used in installation
	3.4 Describe building materials and their property may effect during installation of pipe lines, fittings etc.
	3.5 Identify the type of pipes and their material.
	3.6 Develop free hand sketches i. Draw a simple bathroom installation. ii. Draw a waste water outlet from the Bathroom.

4. Identify different tools for Plumbing	After completion of this module students will be able to 4.1 Describe the major tools used in plumbing-
	4.2 Identify different types of holding tools and use the same as per requirement.
	4.3 Identify different types of fitting tools and use the same as per requirement.
	4.4 Identify different types of Cutting tools and use the same as per requirement.
	4.5 Identify different types of Pipe bending tools and use the same as per requirement.
	4.6 Identify different types of other accessories besides mentioned above and use the same as per requirement.
5. Know different Plumbing Material and Pipes.	After completion of this module students will be able to 5.1 Prepare list of different Sealing materials and location where they are used in plumbing.
	5.2 Identify different types of pipes used in water supply and sanitary and drainage work and their advantages, disadvantage and Care during work.
6. Identify measurements and Symbols used in Plumbing	After completion of this module students will be able to 6.1 Identify different types of Measuring tools for length, diameter, water pressure
	6.2 Identify different types of Plumbing Symbols-, Importance of plumbing symbols, Identification of the symbols given in the drawings of fixtures
7. Able to use pipe fittings, joints, bends, different pipe joining tools for distribution of water supply.	After completion of this module students will be able to 7.1 Identify the fittings available in the workshop.
	7.2 Prepare a list of the identified fitting items seen in the workshop.
	7.3 Draw figures of the various types of bends.
	7.4 Collect the pipe joints, pipes and tools and join the pipe with the help of proper pipe joining tools.
	7.5 Draw the figure of the threaded joints, grooved and compression joints.
8. Identify different items and in house drainage, sanitary installation.	After completion of this module students will be able to 8.1 Identify the drainage, sanitary installations and conveniences items fitted in the school.
	8.2. Make a list of the identified sanitary items.
	8.3 Identify the sanitary fittings and fixtures and types material used.
	8.4. Draw figures of the various types of sanitary items.
9. Trouble shoot problems in plumbing system.	After completion of this module students will be able to 9.1 Identify causes for and damage in plumbing system
	9.2 Reconditioning of water supply and sanitary fittings. Cleaning of sanitary fittings leakage and repairs. Testing for correct functioning.
10.OJT	Assessor will check report prepared for this component of Practical training of the course and assess whether competency has been developed to work in the real job situation with special emphasis on basic safety and hazards in this domain. (The trainee is expected to undertake work in actual workplace under any supervisor / contractor

	for 60 Hours.)
11. Employability Skill	As per guided curriculum

List of Tools, Equipment & materials needed for a batch of 30 Trainees:

Rural water supply Plumber & Sanitary work Assistant			
S No.	Name of the Tools and Equipment	Specification	Quantity
A. THEORY / CLASS ROOM			
1	Instructor's table with glass top	6 feet x 4 feet	1Nos.
2	Revolving Chair for Classroom		1Nos.
3	Instructor's revolving with arm chair		2Nos.
4	Visitor's chair		2Nos.
5.	Class room chairs (armless)		30 Nos.
6.	Class room table single / Dual desk		30 /15 Nos.
7.	Almirah steel (major)	6" / higher	02 Nos.
8.	Steel Cupboard	180 x 90 x 45 cm	02 Nos.
9.	Steel Cupboard	120 x 60 x 45 cm	02 Nos.
10.	Book Shelf with lock		02 Nos.
11	Magnetic White Board	6' x 4'	2Nos.
12	Working table size	1250x950	2nos
13	Students Lockers	with 8 compartments	4Nos.
14.	Wooden Chest of Drawers		5Nos.
15	First Aid Box		01 No.
16	Fire Extinguisher		01 No.
17	Wall Clock		01 No.
B. TRAINEES TOOL KIT			
18	Rule Steel	300 mm both in inch and mm	31 Nos.
19	Rule Wooden 4 fold	600 mm	31 Nos.
20	Hacksaw Frame adjustable	250 to 300 mm	31 Nos.
21	Scriber	200 mm	31 Nos.
22	Centre punch	100 mm	31 Nos.
23	Chisel Cold, flat	20 mm	31 Nos.
24	Hammer ball peen	800 grams	31 Nos.
25	Hammer ball peen	50 grams	31 Nos.
26	File flat rough	300 mm	31 Nos.
27	Level spirit wooden	300 mm	31 Nos.
28	Plumb bob	50 grams	31 Nos.
29	Trowel	C-125-I S: 6013	31 Nos.
30	Stillson wrench	200 & 350 mm	31 Nos.
31	Screw Driver	250 mm	31 Nos.
32	Wooden Mallet small	I S: 2022	31 Nos.

33	Cutting pliers 200mm	IS : 3650	31 Nos.
34	Steel tape	5m	31 Nos.
B. TOOLS, MEASURING INSTRUMENTS AND GENERAL SHOP OUTFIT			
35	Surface plate	400 X400 mm Grade I	1no.
36	Marking Table	900X600X900mm high	1no.
37	'V' Blocks with clamps	80/7-63A IS 2949	2nos.
38	Combination set	200 mm	1no.
39	Scribing Block, Universal,	300 mm	2nos.
40	Hand Vice, Jaw	50 mm	2nos.
41	File Flat, Smooth	200 mm	2nos.
42	File Half Round, Rough	300 mm	2nos.
43	File, Square, rough	250 mm	2nos.
44	File, Square, Smooth	200 mm	2nos.
45	File Triangular Rough	250 mm	2nos.
46	File Flat Rasp	250 mm	2nos.
47	File Triangular Smooth	200 mm	2nos.
48	Chisel Cold Flat	20 mmX300mm	2nos.
49	Chisel Cross Cut	6X150 mm I S-402	2nos.
50	Chisel Round Nose	3X150 mm I S -402	2nos.
51	Chisel Diamond Point	6X150mm	2nos.
52	Tap and Die set to cut B.S.F. , B.S.W. and metric threads	sizes No.6 to M-12	1 set each
53	Screw Pitch gauge to cover above threads		1set
54	Punch , Letter set		1no.
55	Punch , Number set		1no.
56	Saw Plumber	300mm	2 Nos.
57	Spanner monkey up to	50mm	2Nos.
58	Stove melting solder		1Nos
59	Cutter ,Pipe, wheel type	6mm to 25mm	1 Nos.
60	Oil stone	150X50X25mm	2 Nos
61	Soldering Iron , Copper , Bit , Fire heated , Hatched , Straight ,	500 grams	4 Nos.
62	Snip Straight	250mm	2 No.
63	Snip bend	250mm	2 No.
64	Try square	200mm	2 Nos.
65	Inside Caliper	150mm	2 Nos
66	Caliper outside	150mm	2 Nos
67	Odd leg calliper	200mm	2 Nos.
68	Tenon saw		2 Nos.
69	Hand Saw.		2 Nos
70	Mortise Chisel		2 Sets
71	Firmer Chisel		2 Sets.
72	Mallet Medium	IS: 2922	2 Nos.

73	Jack plane		2 Nos.
74	Gas Welding set with oxygen acetylene cylinder		1 No.
75	Goggles pair welder	100 mm	2 pairs.
76	Brush Steel Wire	150X 50 mm	1 No.
77	Table welding	1200X 750 mm with fire bricks top and stand	1 No.
78	Pliers combination,	200 mm	2 Nos.
79	Blow lamp	500 mililitre	2Nos.
80	Washer cutter		1 No.
81	Mirror	100X150 mm	2 Nos.
82	Scribing gauge		1 No.
83	Soil pot with brush		1 No.
84	Pot- Hook		1 No.
85	D. E. Spanners	7X8, 10X11, 13X17, 19X22, 24X27 IS:2028	2 Sets
86	Branch Gimlets		2 Nos.
87	Bending Spring		1 Set
88	Plumbers Laddle		2nos
89	Tool caulking set of S		2 nos.
90	Plumbers' metal melting pot	10 kg	1 no.
91	Pipe stock and dies complete with stocks, bushing, bushing holders, Taps and wrenches sizes covered, to suit pipes	bore dia 6,8,10,20,25,32,40,&50mm	4 sets
92	Pipe vice	to grip up to 77 mm IS -2587	8 nos.
93	Stillson pattern pipe wrenches	450 mm to take pipe up to 52 mm dia IS -4003	2sets
94	Stillson pattern pipe wrenches	300mm to take pipe 20 mm to 32mm	2sets
95	Chain :pipe wrench	90mm -650 IS 4123	2sets
96	Adjustable, spanner, A-375, IS- 6149		2nos
97	Anvil	50 or 63 kg. IS- 510	1no
98	Pipe bender, manually operated		1no
99	Leg vice, 75mm jaw on Stand IS -2588		1no
100	Hand drill 6mm capacity with drill chuck (Electric)		1no
101	Drill Twist (straight shank)	3mm to 6mm	1set
102	Portable forge ,	450mmwith hand blower	1no
103	Flat smithy tong		2nos.
104	working bench	2400x1200x750mm with 4 voice 125 mm jaws	2nos.
105	Bath tub small size		1no.
106	Wash Basin Equivalent metric	(16"X14"X10")	2nos.

107	Water Heater	10 litres	1no
108	Water closet (European type p) complete with over head cistern		1set
109	Water closet (Indian type) complete with over head cistern		1set
110	Urinal wall type complete with automatic system		1set
111	Water meter		2nos.
112	Steel lockers	with 8 drawers Metal rack (1800x1500x450mm)	3nos.
113	Metal rack	(1800X1500X450mm)	1no
114	Desk		1no
115	Stool		1 no
116	Black Board with glass		1no
117	Fire Extinguisher		1no
118	Fire Buckets with stand		1no
119	Steel Almirah (large)		1no
120	Hammering drilling machine		1no.
121	Electric PPR pipe welding machine		1 No
122	Electric pump,	1 HP	1 no.
123	D.E. Pedestal grinder with two wheels 175mm rough and smooth		1 No.
124	Hydraulic pressure machine for testing leakage in GI pipe fittings etc.		1No.
125	Sight rail and bonning rod		1 No.
126	Ratchet pipe die	15 mm to 32 mm	1 No.
127	Bench drilling machine with chuck and key upto 15mm capacity		1 No.
128	Double face hammers		2 No.
129	Dormat, Pickaxe, Spade, Girmale		1 each
130	Pipe bender (Hydraulic type)		1 No.
131	Solar water heater system		1No
132	Ring guage	15 mm, 20mm, 25mm, 32mm	1 each
C. LIST OF CONSUMABLE			
133	M.S FLAT		As Required
134	M.S ROD		As Required
135	GI pipe "B" grade	½"Ø, ¾"Ø, 1"Ø	As Required

Note: -

1. All the tools and equipment are to be procured as per BIS specification.

Marks distribution

Sr No	Outcome No.	Outcome Name	Total marks Th	Total marks Pr
1	PLM/3001/OC1	Apply Safe Working Practices	20	80
2	PLM/3001/OC2	Explain plumbing system components	20	90
3	PLM/3001/OC3	Interpret diagrams and drawings used for plumbing work	20	90
4	PLM/3001/OC4	Identify different tools for Plumbing	20	90
5	PLM/3001/OC5	Identify different Plumbing Material and Pipes	10	50
6	PLM/3001/OC6	Identify measurements and Symbols used in Plumbing	10	50
7	PLM/3001/OC7	Make Capable to use pipe fittings, joints, bends, different pipe joining tools for distribution of water supply	20	80
8	PLM/3001/OC8	Identify different items and in house drainage, sanitary installation	20	70
9	PLM/3001/OC9	Troubleshoot problems in plumbing system	10	50
10	PLM/3001/OC10	Work in real job situation with special emphasis on basic safety and hazards in this domain.	0	150
11	DGT/VSQ/N0102	Employability Skills- 60 hrs.	50	0