Please refer ***Guidelines for STT/LTT/Apprenticeship/OEM Qualification File***

QUALIFICATION FILE

PLUMBER

☐ Short Term Training (STT) ☒ Long Term Training (LTT) ☐ Apprenticeship

☐ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 3.5

Submitted By:

Directorate General of Training (DGT)

Government of India, Ministry of Skill Development and Entrepreneurship

1st and 2nd Floor, CIRTES Building

Next to Pusa ITI, Pusa Campus

New Delhi – 110012.

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Section 1: Basic Details

<table>
<tr><td>1.</td><td>Qualification Name</td><td colspan="2">PLUMBER</td></tr>
<tr><td>2.</td><td>Sector/s</td><td colspan="2">PLUMBING</td></tr>
<tr><td>3.</td><td>Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options
☐ OEM</td><td>NQR Code & version of existing/previous qualification: 2020/PLUM/DGT/03843</td><td>Qualification Name of existing/previous version: PLUMBER (CITS)</td></tr>
<tr><td>4.</td><td>a. OEM Name
b. Qualification Name
(Wherever applicable)</td><td colspan="2">NA</td></tr>
<tr><td>5.</td><td>National Qualification Register (NQR) Code & Version
(Will be issued after NSQC approval)</td><td>QG-3.5-PL-03196-2024-V2-DGT</td><td>6. NCrF/NSQF Level: 3.5</td></tr>
<tr><td>7.</td><td>Award (Certificate/Diploma/Advance Diploma/Any Other(Wherever applicable specify multiple entry/exits also & provide details in annexure)</td><td colspan="2">National Craft Instructor Certificate (NCIC)</td></tr>
<tr><td>8.</td><td>Brief Description of the Qualification</td><td colspan="2">The individual will be able to impart theoretical instructions, demonstrate practical skills, evaluate and grade trainees of Plumber trade in industrial workshops, ITIs/Vocational Training Institutes etc.</td></tr>
<tr><td>9.</td><td>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</td><td colspan="2">a. Entry Qualification & Relevant Experience:
<table>
<tr><th>S. No.</th><th>Academic/Skill Qualification (with Specialization - if applicable)</th><th>Required Experience (with Specialization - if applicable)</th></tr>
<tr><td>1.</td><td>B.Voc/Degree in Mechanical/ Civil Engineering from AICTE/ UGC recognized Engineering College/ University
OR
03 yrs. Diploma in Mechanical/ Civil Industrial Engineering after class 10th from AICTE/ recognized board of technical education or with two years' experience in the relevant field.
OR
Ex-serviceman from Indian Armed Forces with 15 years of service in related field as per equivalency</td><td></td></tr>
</table></td></tr>
</table>

		through DGR. OR 01 year NTC in Plumber (Candidate must have passed 10th Class). OR 02 years NAC in Plumber (Candidate must have passed 10th Class). **b. Age:** Minimum age 16 years as on first day of academic session.
10.	**Credits Assigned to this Qualification, Subject to Assessment** *(as per National Credit Framework (NCrF))*	45 **11. Common Cost Norm Category (I/II/III)** *(wherever applicable)*: **N/A**
12.	**Any Licensing requirements for Undertaking Training on This Qualification** *(wherever applicable)*	NA
13.	**Training Duration by Modes of Training Delivery** *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*	**☒ Offline ☐Online ☐Blended** **Training Delivery Modes** / **Theory (Hours)** / **Practical (Hours)** / **OJT Mandatory (Hours)** / **Total (Hours)** **Classroom (offline)**: 450 / 750 / 150 / 1350 **Online**: / / / / *(Refer Blended Learning Annexure for details)*
14.	**Aligned to NCO/ISCO Code/s***(if no code is available mention the same)*	2356.0100, 7126.0101, 7126.0102, 7126.0103, 7126.0104, 7126.0105, 7126.0106, 7126.0107, 7126.0201, 7126.0301, 7126.9900, 7212.0101, 7212.0102, 7233.1301
15.	**Progression path after attaining the qualification** *(Please show Professional and Academic progression)*	**Professional** • Technical Instructor in a vocational training Institute/ technical Institution • Supervisor in Industries **Academic** • Diploma • Advance Diploma (Vocational) • Degree • PG
16.	**Other Indian languages in which the Qualification & Model Curriculum are being submitted**	**Hindi**
17.	**Is similar Qualification(s) available on NQR-if yes, justification for this qualification**	**☐ Yes ☒ No URLs of similar Qualifications:**
18.	**Is the Job Role Amenable to Persons with Disability**	**☒ Yes ☐ No** **If "Yes", specify applicable type of Disability:** LD, LC, DW, AA, LV, DEAF
19.	**How Participation of Women will be Encouraged**	The courses will empower women by creating self-employment opportunities and

		enabling them to get jobs as this course offers specialized skilling.	
20.	**Are Greening/ Environment Sustainability Aspects Covered** *(Specify the NOS/Module which covers it)*	☐ **Yes** ☒ **No**	
21.	**Is Qualification Suitable to be Offered in Schools/Colleges**	**Schools** ☐ **Yes** ☒ **No** **Colleges** ☐ **Yes** ☒ **No**	
22.	**Name and Contact Details of Submitting / Awarding Body SPOC** *(In case of CS or MS, provide details of both Lead AB & Supporting ABs)*	**Name: Shri Ishwar Singh, Deputy Director General** **Email: ishwar.singh25@gov.in** **Contact No.: 011-25802140** **Website: https://dgt.gov.in/**	
23.	**Final Approval Date by NSQC: 22 Oct 2024**	**24. Validity Duration: 3 Yrs. from the Date of Approval**	**25. Next Review Date: 21 Oct 2027**

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

***Th**.-Theory **Pr.**-Practical **OJT**-On the Job **Man.**-Mandatory Training **Rec.**-Recommended **Proj.**- Project*

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj. / Int. AM. Th.	Viva / Int. AM. Pr.	Total	Weightage (%) *(if applicable)*
TRADE TECHNOLOGY																
1.	Follow workshop safety measures and monitor job as per specification applying different types of basic fitting operation and check for dimensional accuracy by using steel rule, calliper etc.[Basic Fitting operation- marking, hack sawing, chiselling, filing,, drilling, reaming, taping, off-hand grinding etc. accuracy±0.25mm].	PSC/N9421 V1.0	Core	3.5	0.5	5	10			15	2	4	1	1	8	NA
2.	Demonstrate the work to make job as per specification applying different types of basic fitting operation and check for dimensional accuracy. [Basic fitting operation – marking, Hack sawing, Chiselling, Filing, Drilling, Taping and grinding etc. Accuracy: ± 0.25mm].	PSC/N9422 V1.0	Core	3.5	0.5	5	10			15	2	4	1	1	8	NA

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj. / Int. AM. Th.	Viva / Int. AM. Pr.	Total	Weightage (%) *(if applicable)*
3.	Demonstrate Inner & Outer Thread cutting on Metal & Studs and thread cutting on different types of pipes & fittings accessories.	PSC/N9423 V1.0	Core	3.5	0.5	5	10			15	2	4	1	1	8	NA
4.	Review various wood jointing with carpenter's tools.	PSC/N9424 V1.0	Core	3.5	0.5	5	10			15	2	4	1	1	8	NA
5.	Demonstrate the Cutting of Pipes of different dia. in different angle and Joining of pipes by Gas & Arc welding. Soldering and Brazing.	PSC/N9425 V1.0	Core	3.5	1	10	20			30	3	10	1	3	17	NA
6.	Construct a Masonry brick wall and RCC casting. Demonstrate Brick wall cutting for concealing pipe line.	PSC/N9426 V1.0	Core	3.5	1	10	20			30	3	10	1	3	17	NA
7.	Monitor Cutting and Bending of Pipes using Plumber's tools and equipments.	PSC/N9427 V1.0	Core	3.5	1	10	20			30	3	10	1	3	17	NA
8.	Check &Evaluate various types of PVC pipe joint by different methods and heat process or Welding.	PSC/N9428 V1.0	Core	3.5	1	10	20			30	3	10	1	3	17	NA
9.	Review Installation and maintenance of different Electric pump.	PSC/N9429 V1.0	Core	3.5	1	10	20			30	5	11	1	3	20	NA
10.	Construct complete pipe line circuit with different types of Joints and demonstrate fixing of cocks & valve on Pipe line.	PSC/N9430 V1.0	Core	3.5	1	10	20			30	3	10	1	3	17	NA

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					Weightage (%) *(if applicable)*
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj. / Int. AM. Th.	Viva / Int. AM. Pr.	Total	
11.	Perform water analysis test, Water Pressure test and demonstrate Water distribution system by using Pipe line.	PSC/N9431 V1.0	Core	3.5	0.5	5	10			15	2	5	1	2	10	NA
12.	Plan & execute fitting, fixing & laying installation of hot & cold water pipe line and symboling.	PSC/N9432 V1.0	Core	3.5	0.5	5	10			15	2	5	1	2	10	NA
13.	Demonstrate & assess installation of Kitchen, Sanitary Fittings and Testing of Drainage line.	PSC/N9433 V1.0	Core	3.5	2.5	25	50			75	6	16	3	5	30	NA
14.	Examine and remove Leakage of pipe line as per site Water supply pipe line and Drainage Pipe line layout.	PSC/N9434 V1.0	Core	3.5	2.5	15	60			75	6	16	3	4	29	NA
15.	Construct inspection chamber, manhole, gutter, septic tank, sock pit etc. & Layout of soil pipe.	PSC/N9435 V1.0	Core	3.5	2.5	15	60			75	6	16	2	4	28	NA
16.	Analyze & install Rain Water Harvesting.	PSC/N9436 V1.0	Core	3.5	1	10	20			30	4	10	1	3	18	NA
17.	Monitor repairing & reconditioning, scraping & painting of sanitary fittings, Pipe line.	PSC/N9437 V1.0	Core	3.5	0.5	5	10			15	2	5	1	2	10	NA
18.	Perform Fittings of Water heater and arrange supply of hot & cold water.	PSC/N9438 V1.0	Core	3.5	0.5	5	10			15	2	5	1	2	10	NA
19.	Assemble and Repair different types of Pump.	PSC/N9439 V1.0	Core	3.5	1	10	20			30	4	10	1	3	18	NA
20.	Evaluate Maintenance & Repair of Tank, waste	PSC/N9440 V1.0	Core	3.5	1	10	20			30	4	10	1	3	18	NA

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj. / Int. AM. Th.	Viva / Int. AM. Pr.	Total	Weightage (%) *(if applicable)*
	fittings and Fixing of the Sensor system.															
21.	Assess & test the Pressure of pipe and repair leakage.	PSC/N9441 V1.0	Core	3.5	1	10	20			30	4	10	1	3	18	NA
22.	Monitor Fitting of Hydrants & Sprinklers.	PSC/N9442 V1.0	Core	3.5	0.5	5	10			15	2	5	1	2	10	NA
23.	Draw, Estimate and Execute of Plumbing system.	PSC/N9443 V1.0	Core	3.5	1	10	20			30	4	10	1	3	18	NA
24.	Read and apply engineering drawing for different application in the field of work.	ASC/N9410 V1.0	Non-Core	3.5	1	30				30	12		6		18	NA
25.	Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study.	ASC/N9411 V1.0	Non-Core	3.5	1	30				30	12		6		18	NA
26.	On job training				5			150		150						
Duration (in Hours) / Total Marks					30	270	480	150		900	100	200	40	60	400	
TRAINING METHODOLOGY																
27.	Plan & prepare the learners for the class using basics of educational psychology & motivational techniques.	MEP/N9401 V1.0	Core	3.5	1.5	12	33			45	7	24	2	4	37	
28.	Analyze the syllabus of the Course.	MEP/N9405 V1.0	Core	3.5	1	10	20			30	6	15	1	2	24	
29.	Plan & prepare the training session using various methods viz. 4 step method, question &	MEP/N9406 V1.0	Core	3.5	1	12	18			30	7	13	1	2	23	

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					Weightage (%) *(if applicable)*
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj. / Int. AM. Th.	Viva / Int. AM. Pr.	Total	
	questioning technique etc.															
30.	Communicate effectively with the trainees both verbally and nonverbally.	MEP/N9407 V1.0	Core	3.5	1	12	18			30	7	13	1	2	23	
31.	Use Instructional Technology & facilitate the training program.	MEP/N9408 V1.0	Core	3.5	1	12	18			30	7	13	1	2	23	
32.	Design written instructional materials and implement for imparting training.	MEP/N9409 V1.0	Core	3.5	1	12	18			30	7	13	1	2	23	
33.	Assess, evaluate and certify the tests.	MEP/N9410 V1.0	Core	3.5	1	12	18			30	7	13	1	2	23	
34.	Organize workshop and classroom learning observing instructional methods.	MEP/N9426 V1.0	Core	3.5	1	12	18			30	7	13	1	2	23	
35.	Counsel & mentor the trainees by identifying their Strength & Weaknesses.	MEP/N9428 V1.0	Core	3.5	1	10	20			30	5	15	1	2	23	
36.	Develop Entrepreneurship skills.	MEP/N9438 V1.0	Core	3.5	1	12	18			30	7	13	1	2	23	
37.	Apply ICT & Internet in training (computer-based training) and various types of Distance learning programmes.	MEP/N9439 V1.0	Core	3.5	1	10	20			30	5	15	1	2	23	
38.	Plan and conduct sessions to impart competency based skills and knowledge.	MEP/N9440 V1.0	Core	3.5	1	10	20			30	6	15	1	2	24	
39.	Apply Adult Learning Principles.	MEP/N9441 V1.0	Core	3.5	0.5	7	8			15	3	7	1	1	12	

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					Weightage (%) *(if applicable)*
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj. / Int. AM. Th.	Viva / Int. AM. Pr.	Total	
40.	Develop and implement continuous professional development plan.	MEP/N9442 V1.0	Core	3.5	0.5	7	8			15	3	7	1	1	12	
41.	Develop employability skills for the industrial needs.	MEP/N9475 V1.0	Core	3.5	1	15	15			30	8	11	3	2	24	
42.	Develop future skills in Emerging Technology.	MEP/N9476 V1.0	Core	3.5	0.5	15	0			15	8		2		10	
Duration (in Hours) / Total Marks					15	180	270			450	100	200	20	30	350	
Grand Total					**45**	**450**	**750**	**150**		**1350**	**200**	**400**	**60**	**90**	**750**	

Elective NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.																
2.																
Duration (in Hours) / Total Marks																

Optional NOS/s:

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) *(if applicable)*
1.																
2.																
Duration (in Hours) / Total Marks																

Note: Distribution of marks shown above are indicative only

Assessment - Minimum Qualifying Percentage
*Please specify **any one** of the following:*

Minimum Pass Percentage – Aggregate at qualification level: The minimum pass percent for Trade Practical, TM practical and Formative assessment is 60% & for all other subjects (Theory) is 40%. There will be no Grace marks. *(Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)*

Minimum Pass Percentage –NOS/Module-wise: % *(Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)*

Section 3: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)***(as per NCVET guidelines)*	B.Voc./Degree in appropriate branches of Mechanical / Civil Engineering from AICTE/UGC recognized University with two years experience in relevant field. OR 3 years Diploma in appropriate branches of Mechanical / Civil Engineering from AICTE/ recognized Board/ University or relevant Advanced Diploma (Vocational) from DGT with five years experience in relevant field. OR Ex-serviceman from Indian Armed Forces with 15 years of service in related field as per equivalency through DGR. Candidate should have undergone methods of Instruction of course or minimum 02 years of experience in technical training institute of Indian Armed Forces. OR NTC/ NAC passed in Plumber trade with seven years experience in relevant field. **Essential Qualification:** Relevant National Craft Instructor Certificate (NCIC) in Plumber trade, in any of the variants under DGT.
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	**N/A**
3.	**Tools and Equipment Required for Training**	☒ Yes ☐ No (*If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised Qualification, Details of Any Upskilling Required for Trainer**	NA

Section 4: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**Same as point 1 of section 3 (Trainer's Qualification and Experience)**
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**N/A**
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	**N/A**
4.	**Assessment Mode** *(Specify the assessment mode)*	**Summative Assessment and Formative Assessment**
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☐ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	**Latest Skill Gap Study (not older than 2 years) (Yes/No): N/A**
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): N/A**
3.	**Government /Industry initiatives/ requirement (Yes/No): YES**
4.	**Number of Industry validation provided: NA**
5.	**Estimated nos. of persons to be trained and employed: 150 per year**
6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments: YES** If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF level/NSQF descriptors *(Mandatory)*	Annexure: Evidence of Level
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	Annexure: Tools and Equipment (Lab Set-Up)
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	Annexure: Detailed Assessment Criteria
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Annexure: Assessment Strategy
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	*N/A*
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	Yes
7.	**Annexure:** Acronym and Glossary *(Optional)*	Yes
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	Yes
9.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	Yes
10.	**Supporting Document:** Occupational Map *(Mandatory)*	*N/A*
11.	**Supporting Document:** Assessment SOP *(Mandatory)*	*https://dgt.gov.in/sites/default/files/Modified%20CITS-Prospectus%202022.pdf*
12.	**Any other document you wish to submit:**	

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	**Demands wide range of specialized technical skill, clarity of knowledge and practice in broad range of activity involving standard non standard practices** • Follow workshop safety measures and monitor job as per specification applying different types of basic fitting operation and check for dimensional accuracy by using steel rule, calliper etc.[Basic Fitting operation- marking, hack sawing, chiselling, filing,, drilling, reaming, taping, off-hand grinding etc. accuracy±0.25mm]. • Demonstrate the work to make job as per specification applying different types of basic fitting operation and check for dimensional accuracy. [Basic fitting operation – marking, Hack sawing, Chiselling, Filing, Drilling, Taping and grinding etc. Accuracy: ± 0.25mm]. • Demonstrate Inner & Outer Thread cutting on Metal & Studs and thread cutting on different types of pipes & fittings accessories.	As per the learning outcomes, the learner is expected to prepare layout, assemble, install and maintain sanitary fittings and fixtures, sewage and drainage systems, heating and sanitary systems, gas and water pipe lines etc. Receives instructions from Sanitary Engineer or Civil Engineer regarding layout of pipes, gas or water mains, position of fixtures and fittings, etc. The learner is also expected to plan, organise and supervise the work for achieving the desired output as per given specifications. The above tasks performed by the learner demands wide range of specialized technical skills, clarity of knowledge and practice in broad range of activity involving standard practices. Hence NSQF Level 3.5 is justified for this descriptor.	3.5
Professional and Technical Skills/ Expertise/ Professional Knowledge	**Factual & theoretical knowledge in broad contexts within the field of work or study** • Review various wood jointing with carpenter's tools. • Demonstrate the Cutting of Pipes of different Dia in different angle and Joining of pipes by Gas & Arc welding. Soldering and Brazing. • Construct a Masonry brick wall and RCC casting. Demonstrate Brick wall cutting for concealing pipe line. • Monitor Cutting and Bending of Pipes using Plumber's tools and equipments.	The learner is expected to possess the knowledge about basic as well as advance plumbing, sanitary fitting in domestic and as well as commercial and industrial area. The learner here makes layout as per preliminary layout of a building. Design the plumbing line as well as the sanitary fixtures to be fitted. Also the learner demonstrates the layman to make jointing, soldering, Gas and Arc welding as per requirement. The above professional knowledge possessed by the learner are the factual &theoretical knowledge in broad context required in this field of work or study. Hence NSQF Level is 3.5 for this descriptor.	3.5
Employment Readiness & Entrepreneurship	• Check & Evaluate various types of PVC pipe joint by different methods and heat process or Welding. • Review Installation and maintenance of different Electric	The learning outcomes for example 'Check &Evaluate various types of PVC pipe joint by different methods and heat process or Welding',	3.5

Skills & Mind-set/Professional Skill	pump. • Construct complete pipe line circuit with different types of Joints and demonstrate fixing of cocks & valve on Pipe line. • Perform water analysis test, Water Pressure test and demonstrate Water distribution system by using Pipe line. • Plan & execute fitting, fixing & laying installation of hot & cold water pipe line and symboling.	'Perform Water analysis test, Water Pressure test and demonstrate Water distribution system by using Pipe line' needs a good depth of knowledge about the subject and also the practicality and difficulties faced during execution of work. The learner here possess fair bit of knowledge how to demonstrate and monitor the overall execution of plumbing process. Hence NSQF Level 3.5 is justified for this descriptor.	
Broad Learning Outcomes/Core Skill	**Reasonably good in mathematical calculation and understanding of social/political** • Demonstrate mathematical concept and principles to perform practical operations. • Explain science in the field of study including simple machines. **Reasonably good in data collecting organizing information and logical communication** • Communicate effectively with the trainees both verbally and non-verbally. • Plan & prepare the training session using various methods viz. 4 step method, question & questioning technique etc.	The learning outcomes for example "Demonstrate mathematical concept and principles to perform practical operations" and "Communicate effectively with the trainees both verbally and non-verbally" displays the need where the learner is required to be reasonably good in mathematical calculation, needs to possess sound understanding of associated social & political issues, data collecting, organising information and logical communication in order to analyze and solve problems. Hence NSQF Level is 3.5 for this descriptor.	3.5
Responsibility	• Demonstrate & assess installation of Kitchen, Sanitary Fittings and Testing of Drainage line. • Examine and remove Leakage of pipe line as per site Water supply pipe line and Drainage Pipe line layout. • Construct inspection chamber, manhole, gutter, septic tank, sock pit etc.& Layout of soil pipe. • Analyze & install Rain Water Harvesting. • Monitor repairing & reconditioning, scraping & painting of sanitary fittings,Pipe line. • Perform Fittings of Water heater and arrange supply of hot & cold water. • Assemble and Repair different types of Pump. • Evaluate Maintenance & Repair of Tank, waste fittings and Fixing of the Sensor system. • Assess & test the Pressure of pipe and repair leakage. • Monitor Fitting of Hydrants & Sprinklers.	The learner is able to guide, monitor, assess and review the work performed the team members and ensures effective operations of planning and execution of Sanitary works. He/she is able to demonstrate possible solutions to specific problems and check tasks within the team; communicates logically. While designing and supervising the task of plumbing work in different areas, he should be well aware of the domain of his expertise and act according to the best of his knowledge. The learner plans and organizes assigned work; detects & resolves issues during execution in his field of work. Hence NSQF Level is 3.5 is justified for this descriptor.	3.5

	• Draw, Estimate and Execute of Plumbing system.		

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment
Batch Size: 25

S No.	Name of the Tool & Equipment	Specification	Quantity for specified Batch size
A. TRAINEES TOOL KIT			
1.	Rule Steel	300 mm both in inch and mm	26 Nos.
2.	Rule Wooden 4 fold	600 mm	26 Nos.
3.	Hacksaw Frame	adjustable for 250 to 300 mm	26 Nos.
4.	Scriber	200 mm	26 Nos.
5.	Centre punch	100 mm	26 Nos.
6.	Chisel Cold, flat	20 mm	26 Nos.
7.	Hammer ball peen	800 grams	26 Nos.
8.	Hammer ball peen	50 grams	26 Nos.
9.	File flat rough	300 mm	26 Nos.
10.	Level spirit wooden	300 mm	26 Nos.
11.	Plumb bob	50 grams	26 Nos.
12.	Trowel C-125-I S: 6013	Standard	26 Nos.
13.	Still son wrench 200 & 350 mm	Standard	26 Nos.
14.	Screw Driver	250 mm	26 Nos.
15.	Wooden Mallet small I S: 2022	Standard	26 Nos.
16.	Cutting pliers I S : 3650	200mm	26 Nos.
17.	Steel tape	5m	26 Nos.
B. TOOLS, MEASURING INSTRUMENTS AND GENERAL SHOP OUTFIT			
18.	Surface plate	400 X400 mm Grade I	1 No.
19.	Marking Table	900X600X900mm high	1 No.
20.	'V' Blocks with clamps 80/7-63A IS 2949	Standard	2 Nos.
21.	Combination set	200 mm	1 No.
22.	Universal Scribing Block	300 mm	5 Nos.
23.	Hand Vice Jaw	50 mm	5 Nos.
24.	File Flat Smooth	200 mm	13 Nos.
25.	File Half Round Rough	300 mm	13 Nos.
26.	File Square rough	250 mm	13 Nos.

27.	File Square Smooth	200 mm	13 Nos.
28.	File Triangular Rough	250 mm	13 Nos.
29.	File Flat Rasp	250 mm	13 Nos.
30.	File Triangular Smooth	200 mm	13 Nos.
31.	Chisel Cold Flat	20 mmX300mm	13 Nos.
32.	Chisel Cross Cut I S-402	6X150 mm	13 Nos.
33.	Chisel Round Nose I S -402	3X150 mm	13 Nos.
34.	Chisel Diamond Point	6X150mm	13 Nos.
35.	Tap and tap wrench to cut B.S.F. , B.S.W.	Metric threads of sizes No.M6 to M-12 and British thread to 1/"	5 set each
36.	Screw Pitch gauge to cover above threads	Standard	5set
37.	Letter Punch	8mm	1 No.
38.	Number Punch	8mm	1 No.
39.	Hand hacksaw frame	300mm	13 Nos.
40.	Spanner monkey	up to 50mm	5Nos.
41.	Stove melting (solder Iron and bit)	Standard	5Nos
42.	Pipe Cutter wheel type	6mm to 25mm	5 Nos.
43.	Oil stone	150X50X25mm	2 Nos.
44.	Soldering Iron , Copper , Bit , Fire heated , Hatched , Straight	500 grams	4 Nos.
45.	Snip Straight	250mm	5 Nos.
46.	Snip bend	250mm	5 Nos.
47.	Try square	200mm	5 Nos.
48.	Inside Calliper	150mm	13 Nos.
49.	Caliper outside	150mm	13 Nos.
50.	Odd leg calliper	200mm	13 Nos.
51.	Tenon saw	Standard	5 Nos.
52.	Hand Saw	Standard	5 Nos.
53.	Mortise Chisel	6mm, 8mm, 10mm, 12mm ,15mm, 25mm	Each 5 Sets
54.	Firmer Chisel	Standard	5 Sets.
55.	Mallet Medium IS: 2922	Standard	13 Nos.
56.	Jack plane	Standard	13 Nos.
57.	Gas Welding set with oxygen acetylene cylinder	Standard	1 No.
58.	Table welding	1200X 750 mm with fire bricks top and stand	1 No.
59.	Combination Pliers	200 mm	13 Nos.
60.	Blow lamp	500 millilitre	5Nos.
61.	Washer cutter	Hollow punch 6mm to 30mm	Each 2set.
62.	Scribing gauge	Standard	5 No.
63.	Soil pot with brush	Standard	1 No.
64.	Pot- Hook	Standard	3 No.
65.	D. E. Spanners IS:2028	6mm to 32mm	Each 2 Sets
66.	Branch Gimlets	Standard	2 Nos.

67.	Bending Spring	Standard	2 Set
68.	Plumbers Ladle	Standard	2 Nos.
69.	Caulking Tool	set of 5nos.	2 Set
70.	Plumbers' metal melting pot 10 kg	Standard	1 No.
71.	Pipe Die and Die stock with complete set	up to 2/"	4 sets
72.	Pipe vice IS -2587	up to 75 mm	8 Nos.
73.	Still son pattern pipe wrenches IS -4003	450 mm	13 sets
74.	Still son pattern pipe wrenches 300mm	Standard	13 sets
75.	Chain pipe wrench	90mm-650 is 4123	2sets
76.	Adjustable spannerIS- 6149	12"	13 Nos.
77.	Anvil IS- 510	50 or 63 kg.	1 No
78.	Pipe bender manually operated	Standard	2 Nos.
79.	Leg vice IS -2588	75mm jaw with Stand	1 No
80.	Hand drill machine	up to 13mm capacity with drill chuck (Electric)	1 No
81.	Drill Twist (straight shank)	1.5mm to 13mm	Each 3set
82.	Portable forge	450mmwith hand blower	1 No
83.	Smithy tong different shapes	Standard	Each 2 Nos.
84.	working bench	2400x1200x750mm with 4 voice 125 mm jaws	5 Nos.
85.	Bath tub small size	Standard	2 No.
86.	Wash Basin Equivalent metric	16"X14"X10"	5 Nos.
87.	Water Heater	10litres	5 Nos.
88.	Water closet (European type p) complete with over head cistern	Standard	2set
89.	Water closet (Indian type) complete with over head cistern	Standard	2set
90.	Urinal wall type complete with automatic system	Standard	1set
91.	Water meter	Standard	5 Nos.
92.	Black Board with glass	Standard	2 Nos.
93.	Fire Extinguisher (CO2and DCP)	Standard	Each1No
94.	Fire Buckets with stand	Standard	2 Nos.
95.	Hammering drilling machine with drill bit	6mm to 32mm	Each 2 Nos.
96.	Electric PPR pipe welding machine	Standard	1 No
97.	Electric pump, 1 HP ((Centrifugal, reciprocating, submersible pumps, etc.)	Standard	1 No.
98.	Pedestal grinder machine	Standard	1 No.
99.	Hydraulic pressure machine for testing leakage in pipe fittings etc.	Standard	1No.

100.	Sight rail and boning rod	Standard	1 No.
101.	Ratchet pipe die set	15 mm to 32 mm	1 No.
102.	Bench drilling machine with chuck	up to 25mm capacity	1 No.
103.	Double face hammers	Standard	2 No.
104.	Dormant, Pickaxe, Spade, Grimace	Standard	1 each
105.	Pipe bender(Hydraulic type)	Standard	1 No.
106.	Ring spanner set m	6mm to 32m	2 set
107.	Solar water heater system	Standard	1No
108.	Solar cooker	Standard	1No
C. CLASS ROOM FURNITURE			
109.	Class Room Chairs (armless) / Dual desk may also be allowed	Standard	25 /13Nos.
110.	Class Room Tables (3ft X 2ft) / Dual desk may also be allowed	Standard	25 /13Nos.
111.	Chair for Trainer (armed) movable	Standard	01No.
112.	Table for Trainer (4 ½ft X 2 ½ft) with Drawer and cupboard	Standard	01 No.
113.	LCD / LED Projector	Standard	01 No.
114.	Desktop computer	CPU: 32/64 Bit i3/i5/i7 or latest processor, Speed: 3 GHz or Higher. Cache Memory: - Minimum 3 MB or better. RAM:-8 GB DDR-III or Higher. Hard Disk Drive: 500GB or Higher, 7200 rpm (minimum) or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet (10/100/1000) - Wi-Fi, USB Mouse, USB Keyboard and Monitor (Min. 17 Inch), Standard Ports and connectors. DVD Writer, Speakers And Mic. Licensed Windows Operating System / OEM Pack(Preloaded), Antivirus / Total Security	01 set
115.	UPS	Standard	As required
116.	Computer Table	Standard	01 No.
117.	White Board	6ft X 4 ft.	01 No.
118.	LCD Projector Screen	Standard	
119.	Air Conditioner (OPTIONAL)	Standard	As required
120.	Wall Clock	Standard	01 No.
121.	Wall charts, Transparencies and DVDs related to the trade	Standard	As required

NOTE:

1. *No additional items are required to be provided for the batch working in The second shift except the item under trainee's tool kit and lockers.*
2. *Items such as sockets, elbow, u-1rap, w-Trap, pipes etc. required for day to day Plumbing work should be purchased.*
3. *The specification of the items in the above list has been given in Metric Unit and is based on the ISI Standards wherever available. While procuring the I.S.I Specifications should be strictly followed Measuring instrument such as steel rule Which are graduated both in English and Metric unit may be procured, if available*

Classroom Aids

The aids required to conduct sessions in the classroom are:

1.

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile *(if available)*
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							

Annexure: Training & Employment Details

Training and Employment Projections: N/A

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications: N/A

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented: N/A

1.
2.

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☒ Digital Content ☒ Qualification Handbook ☐ Any Other:

Languages in which Content is available: English/ Hindi

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools: N/A

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:
https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline: Online Ratio
1	☐Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	☐Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	☐Showing Practical Demonstrations to the learners		
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☐Tutorials/ Assignments/ Drill/ Practice		
6	☐Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☐ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks/ Internal Assessment (Theory)	Viva Marks/ Internal Assessment (Practical)
TRADE TECHNOLOGY					
1. Follow workshop safety measures and monitor job as per specification applying different types of basic fitting operation and check for dimensional accuracy by using steel rule, calliper etc.[Basic Fitting operation- marking, hack sawing, chiselling, filing,, drilling, reaming, taping, off-hand grinding etc. accuracy±0.25mm]. (NOS: PSC/N9421)	Plan & identify tools, instruments and equipment for marking and make this available for use in a timely manner.	0.2	0.4	0.1	0.1
	Demonstrate raw material and visual inspection for defects.	0.2	0.4	0.1	0.1
	Illustrate as per specification applying desired mathematical calculation and observing standard procedure.	0.2	0.4	0.1	0.1
	Demonstrate all dimensions in accordance with standard specifications and tolerances.	0.2	0.4	0.1	0.1
	Identify hand tools for different fitting operations and make these available for use in a timely manner.	0.2	0.4	0.1	0.1
	Demonstrate the job for Hacksawing, chiselling, filing, drilling, tapping, grinding.	0.2	0.4	0.1	0.1
	Demonstrate basic fitting operations viz., Hacksawing, filing, drilling, tapping and grinding to close tolerance as per specification to make the job.	0.2	0.4	0.1	0.1
	Demonstrate safety procedure during above operation as per standard norms and company guidelines.	0.2	0.4	0.1	0.1
	Check for dimensional accuracy as per standard procedure.	0.2	0.4	0.1	0.1
	Avoid waste, ascertain unused materials and components for disposal, store these in an environmentally appropriate manner and prepare for disposal.	0.2	0.4	0.1	0.1
	Total Marks	**2**	**4**	**1**	**1**
2. Demonstrate the work to make job as per specification applying different types of basic fitting operation and Check for dimensional accuracy. [Basic fitting operation –	Demonstrate Identification of tools, instruments and equipments for marking and make this available for use in a timely manner.	0.2	0.4	0.1	0.1
	Select different raw material and inspect visually for defects.	0.2	0.4	0.1	0.1
	Demonstrate the appropriate mark as per specification applying desired mathematical calculation and observing standard procedure.	0.2	0.4	0.1	0.1
	Demonstrate all dimensions in accordance with standard specifications and tolerances.	0.2	0.4	0.1	0.1
	Operate Hand Tools for different fitting operations and make these available for use in a timely manner.	0.2	0.4	0.1	0.1

marking, Hacksawing, Chiseling, Filing, Drilling, Taping and Grinding etc. Accuracy: ± 0.25mm] (NOS: PSC/N9422)	Operate the job for Hack sawing, chiselling, filing, drilling, tapping, grinding.	0.2	0.4	0.1	0.1
	Perform basic fitting operations viz., Hack sawing, filing, drilling, tapping and grinding to close tolerance as per specification to make the job.	0.2	0.4	0.1	0.1
	Observe& follow safety procedure during above operation as per standard norms and company guidelines.	0.2	0.4	0.1	0.1
	Check for dimensional accuracy as per standard procedure.	0.2	0.4	0.1	0.1
	Plan & demonstrate avoidance of waste, ascertain unused materials and components for disposal, store these in an environmentally appropriate manner and prepare for disposal.	0.2	0.4	0.1	0.1
	Total Marks	**2**	**4**	**1**	**1**
3. Demonstrate Inner & Outer Thread cutting on Metal & Studs and thread cutting on different types of pipes & fittings accessories. (NOS:PSC/N9423)	Explain Hand Tools for Plumber work.	0.2	0.5	0.1	0.1
	Select Hand Tools for Cutting Inner thread and Outer thread.	0.2	0.5	0.1	0.1
	Use the pipe fittings accessories.	0.2	0.5	0.1	0.1
	Perform Inner thread cutting as per drawing.	0.3	0.5	0.1	0.1
	Perform Outer thread cutting as per drawing.	0.3	0.5	0.1	0.1
	Demonstrate preparation of Pipe line circuit with fittings as per drawing.	0.3	0.5	0.2	0.2
	Observe safety procedure during thread cutting as per standard norms and company guidelines.	0.3	0.5	0.2	0.2
	Check and verify the job as per drawing.	0.2	0.5	0.1	0.1
	Total Marks	**2**	**4**	**1**	**1**
4. Review various wood jointing with carpenter's tools. (NOS: PSC/N9424)	Identify & select the woods and describe their characters.	0.6	2	0.2	0.6
	Demonstrate use of Carpenter's hand Tools.	0.6	2	0.2	0.6
	Prepare the job as per drawing.	0.6	2	0.2	0.6
	Observe safety procedure during wood cutting, sawing, chiseling. Plan as per standard norms and company guidelines.	0.6	2	0.2	0.6
	Check and verify the job as per drawing.	0.6	2	0.2	0.6
	Total Marks	**3**	**10**	**1**	**3**
5. Demonstrate the Cutting of Pipes of different Dia in different angle and Joining of pipes by Gas & Arc welding. Soldering and Brazing. (NOS: PSC/N9425)	Demonstrate different components/parts of Gas (oxy-acetylene) machine, collect desired information and set each components/parts as per standard procedure.	0.2	0.5	0.1	0.2
	Observe safety/ precaution during operation.	0.2	1	0.1	0.2
	Demonstrate selection of appropriate material & plan for gas cutting & joining operation.	0.3	1	0.1	0.3
	Demonstrate Cutting& joining of metal parts / mechanical components as per specification observing standard procedure.	0.3	1	0.1	0.3
	Check cut portion/ joined part to ascertain proper welding.	0.3	1	0.1	0.3
	Demonstrate use of hand tools for Soldering and Brazing.	0.3	1	0.1	0.3
	Demonstrate marking and develop various forms as per drawing using sheet metals.	0.3	1	0.1	0.3
	Demonstrate making of simple items with sheet metal as per drawing.	0.3	1	0.1	0.3
	Perform Soldering and Brazing.	0.3	1	0.1	0.3

	Observe & follow safety procedure during operation	0.3	1	0.1	0.3
	Check and verify the job as per drawing.	0.2	0.5		0.2
	Total Marks	**3**	**10**	**1**	**3**
6. Construct a Masonry brick wall and RCC casting. Demonstrate Brick wall cutting for concealing pipe line. (NOS: PSC/N9426)	Demonstrate use of different types of Mason's hand tools.	0.6	2	0.2	0.6
	Analyze & select the Construction materials.	0.6	2	0.2	0.6
	Make a simple construction of different type of Brick joints with mortar.	0.6	2	0.2	0.6
	Demonstrate preparation of a job related to masonry work and RCC casting as per drawing.	0.6	2	0.2	0.6
	Check & verify the job as per drawing.	0.6	2	0.2	0.6
	Total Marks	**3**	**10**	**1**	**3**
7. Monitor Cutting and Bending of Pipes using Plumber's tools and equipments. (NOS: PSC/N9427)	Demonstrate use of different types of Plumber's hand tools.	0.5	1.7	0.2	0.5
	Demonstrate care & maintenance of hand tools.	0.5	1.7	0.2	0.5
	Demonstrate cutting of pipe with Pipe cutter.	0.5	1.7	0.2	0.5
	Demonstrate working of Bending Machine and accessories.	0.5	1.7	0.2	0.5
	Assess the desired bend on pipe as per drawing.	0.5	1.6	0.1	0.5
	Check the job as per Drawing.	0.5	1.6	0.1	0.5
	Total Marks	**3**	**10**	**1**	**3**
8. Check & Evaluate various types of PVC pipe joint by different methods and heat process or Welding. (NOS: PSC/N9428)	Demonstrate use of different types of PVC Pipe.	0.6	2	0.2	0.6
	Demonstrate working of Electric Welding Machine and accessories for PVC pipes	0.6	2	0.2	0.6
	Demonstrate Simple joint of PVC pipe by Welding Machine.	0.6	2	0.2	0.6
	Evaluate making of job with PVC fittings and pipe as per drawing.	0.6	2	0.2	0.6
	Observe safety procedure during operation.	0.6	2	0.2	0.6
	Total Marks	**3**	**10**	**1**	**3**
9. Review installation and maintenance of different Electric pump. (NOS: PSC/N9429)	Demonstrate selection of the pump and inspect for defects.	1	3	0.2	0.6
	Select the tools, instrument and equipment for the pump installation and repairing.	1	2	0.2	0.6
	Check and calculate output of the pumps.	1	2	0.2	0.6
	Install pump observing standard procedure and method as per specification using appropriate tools and raw material.	1	2	0.2	0.6
	Check performance of the pump.	1	2	0.2	0.6
	Total Marks	**5**	**11**	**1**	**3**
10. Construct complete pipe line circuit with different types of Joints and demonstrate fixing of cocks & valve on Pipe line. (NOS: PSC/N9430)	Demonstrate Identification of different types of Joints.	0.2	0.5	0.1	0.2
	Demonstrate Identification & selection of different types of tools /Joints.	0.2	1	0.1	0.2
	Demonstrate making of a Flange joint as per drawing.	0.3	1	0.1	0.3
	Demonstrate making of a Detachable joint as per drawing.	0.3	1	0.1	0.3
	Demonstrate making of a Spigot & Socket joint as per drawing.	0.3	1	0.1	0.3
	Demonstrate making of a Socket joint as per drawing.	0.3	1	0.1	0.3
	Demonstrate use of GI fittings.	0.3	1	0.1	0.3
	Demonstrate application of Cocks & Valves.	0.3	1	0.1	0.3
	Select Tools for fixing of fittings with GI pipe, Cocks & Valves.	0.3	1	0.1	0.3
	Observe making of a simple job on GI Pipe with fittings, Cocks, and	0.3	1	0.1	0.3

	Valves as per drawing.				
	Check & verify the job as per drawing.	0.2	0.5		0.2
	Total Marks	**3**	**10**	**1**	**3**
11. Perform water analysis test, Water Pressure test and demonstrate Water distribution system by using Pipe line. (NOS: PSC/N9431)	Demonstrate preparation of water for test.	0.4	1	0.2	0.4
	Prepare water analysis kits.	0.3	0.5	0.1	0.3
	Demonstrate testing procedure of water for pH, TDS, temperature as per requirements.	0.4	1	0.2	0.4
	Prepare Hydraulic Pressure Test Machine.	0.3	1	0.2	0.3
	Demonstrate Pressure test on Cistern and Tank.	0.3	1	0.2	0.3
	Check and verify test result.	0.3	0.5	0.1	0.3
	Total Marks	**2**	**5**	**1**	**2**
12. Plan &execute fitting, fixing & laying installation of hot & cold water pipe line and symboling. (NOS: PSC/N9432)	Demonstrate identification of tools, instrument &equipments for desired work and make this available for use in a timely manner.	0.4	1	0.2	0.4
	Demonstrate installation of pipe line for distribution of hot & cold water according to drawing.	0.4	1	0.2	0.4
	Demonstrate installation of hot water system & solar water heating system in accordance with standard specification and drawing.	0.4	1	0.2	0.4
	Observe & follow safety procedure during desired operation as per standard norms and schedule drawing.	0.4	1	0.2	0.4
	Check different parameters and functionality of the system.	0.4	1	0.2	0.4
	Total Marks	**2**	**5**	**1**	**2**
13. Demonstrate & assess installation of Kitchen, Sanitary Fittings and Testing of Drainage line. (NOS: PSC/N9433)	Demonstrate identification of tools, instrument &equipments for desired work and make this available for use in a timely manner.	1	3	0.5	0.7
	Demonstrate fixing of Kitchen Sink, Hand Wash Basin in wall.	1	3	0.5	0.8
	Demonstrate fitting of Urinal, Pan, Commode.	1	2	0.4	0.7
	Demonstrate fitting of waste Pipe and Drainage Pipe.	1	2	0.4	0.7
	Demonstrate identification of tools and equipment for testing pipe line.	1	2	0.4	0.7
	Test pipe line observing standard procedure.	0.5	2	0.4	0.7
	Observe & comply safety precaution during operation.	0.5	2	0.4	0.7
	Total Marks	**6**	**16**	**3**	**5**
14. Examine and remove Leakage of pipe line as per site Water supply pipe line and Drainage Pipe line layout. (NOS: PSC/N9434)	Demonstrate identification of tools and equipment for testing pipe line.	0.8	2	0.4	0.5
	Demonstrate preparation of the job for different testing for pipe line.	0.8	2	0.4	0.5
	Test pipe line observing standard procedure.	0.8	2	0.4	0.5
	Observe& comply safety precaution during operation.	0.8	2	0.4	0.5
	Identify the leakage pipe& repair the same.	0.7	2	0.4	0.5
	Remove pipe leakages as per standard procedure.	0.7	2	0.4	0.5
	Observe safety procedure during desired operation as per standard norms.	0.7	2	0.3	0.5
	Check performance after removal of leakages.	0.7	2	0.3	0.5
	Total Marks	**6**	**16**	**3**	**4**
15. Construct inspection chamber, manhole,	Demonstrate use of tools and equipment for desired purpose and make this available for use in a timely manner.	1	3	0.5	0.6

gutter, septic tank, sock pit etc.& Layout of soil pipe. (NOS: PSC/N9435)	Select raw materials and inspect for defect.	0.5	2	0.4	0.5
	Demonstrate marking as per drawing applying desired mathematical calculation and observing standard procedure.	1	3	0.5	0.6
	Demonstrate construction of inspection chamber, manhole, gutter, septic tank, socket etc. as per drawing.	1	2	0.4	0.6
	Measure all dimensions in accordance with standard specification and tolerance.	1	2	0.4	0.6
	Observe & comply safety procedure during desired operation as per standard norms.	1	2	0.4	0.6
	Check for dimensional accuracy as per standard procedure.	0.5	2	0.4	0.5
	Total Marks	**6**	**16**	**3**	**4**
16. Analyze & install Rain Water Harvesting. (NOS: PSC/N9436)	Explain Rain Water Harvesting.	0.5	1	0.1	0.4
	Demonstrate use of tools and equipment for desired purpose and make this available for use in a timely manner.	0.6	2	0.2	0.5
	Demonstrate rain water Gutter.	0.6	2	0.2	0.5
	Demonstrate Outlet and grounding of the Pipe line.	0.6	2	0.2	0.4
	Demonstrate Supply of water using various types Pipe Fittings.	0.6	1	0.1	0.4
	Test pipe line observing standard procedure.	0.6	1	0.1	0.4
	Observe safety precaution during operation.	0.5	1	0.1	0.4
	Total Marks	**4**	**10**	**1**	**3**
17. Monitor repairing & reconditioning, scraping & painting of sanitary fittings, Pipe line. (NOS: PSC/N9437)	Demonstrate use of tools, instrument &equipments for desired work and make this available for use in a timely manner.	0.4	1	0.2	0.4
	Demonstrate cleaning of sanitary pipe line and remove corrosion from pipe line.	0.4	1	0.2	0.4
	Explain corrosion from pipe line and perform scraping & painting of pipe line in accordance with standard guidelines.	0.3	1	0.2	0.3
	Plan & execute replacement of broken or cracked sanitary fitting.	0.3	1	0.2	0.3
	Observe safety procedure during desired operation as per standard norms and schedule drawing.	0.3	0.5	0.1	0.3
	Check different parameters and functionality of the system.	0.3	0.5	0.1	0.3
	Total Marks	**2**	**5**	**1**	**2**
18. Perform Fittings of Water heater and arrange supply of hot & cold water. (NOS: PSC/N9438)	Demonstrate use of tools, instrument &equipments for desired work and make this available for use in a timely manner.	0.4	1	0.2	0.4
	Plan for Installation of pipe line for distribution of hot & cold water according to drawing.	0.4	1	0.2	0.4
	Demonstrate installation of hot water system & solar water heating system in accordance with standard specification and drawing.	0.4	1	0.2	0.4
	Observe safety procedure during desired operation as per standard norms and schedule drawing.	0.4	1	0.2	0.4
	Check different parameters and functionality of the system.	0.4	1	0.2	0.4
	Total Marks	**2**	**5**	**1**	**2**
19. Assemble and	Select the pump and inspect for defects.	0.8	2	0.2	0.6

Repair different types of Pump. (NOS: PSC/N9439)	Select the tools, instrument and equipment for the pump installment and repairing.	0.8	2	0.2	0.6
	Check and identify default parts of the pumps.	0.8	2	0.2	0.6
	Demonstrate installation of pump Observing standard procedure and method as per specification using appropriate tools and raw material.	0.8	2	0.2	0.6
	Check performance of the pump.	0.8	2	0.2	0.6
	Total Marks	**4**	**10**	**1**	**3**
20. Evaluate Maintenance & Repair of Tank, waste fittings and Fixing of the Sensor system. (NOS: PSC/N9440)	Demonstrate use of tools, instrument &equipments for desired work and make this available for use in a timely manner.	0.8	2	0.2	0.6
	Demonstrate cleaning and maintenance of the Tank or Sump.	0.8	2	0.2	0.6
	Demonstrate fixing of the sensor system in Sanitary fittings.	0.8	2	0.2	0.6
	Observe safety procedure during desired operation as per standard norms.	0.8	2	0.2	0.6
	Check for dimensional accuracy as per standard procedure.	0.8	2	0.2	0.6
	Total Marks	**4**	**10**	**1**	**3**
21. Assess & test the Pressure of pipe and repair leakage. (NOS: PSC/N9441)	Demonstrate use of tools, instrument &equipments for desired work and make this available for use in a timely manner.	0.6	1.2	0.2	0.4
	Explain calculation of pressure test in pipe line.	0.4	1.1	0.1	0.3
	Explain about Hydraulic pressure test machine.	0.4	1.1	0.1	0.3
	Demonstrate preparation of the job for testing for pipe line by Hydraulic pressure test machine .	0.5	1.1	0.1	0.4
	Observe safety precaution during operation.	0.4	1.1	0.1	0.3
	Identify the leakage in pipe& repair.	0.5	1.1	0.1	0.4
	Remove pipe leakages as per standard procedure.	0.4	1.1	0.1	0.3
	Observe safety procedure during desired operation as per standard norms.	0.4	1.1	0.1	0.3
	Check performance after removal of leakages.	0.4	1.1	0.1	0.3
	Total Marks	**4**	**10**	**1**	**3**
22. Monitor Fitting of Hydrants & Sprinklers. (NOS: PSC/N9442)	Demonstrate use of tools, instrument &equipments for desired work and make this available for use in a timely manner.	0.3	0.7	0.2	0.3
	Explain about Hydrant.	0.2	0.6	0.1	0.2
	Demonstrate fitting of Hydrant.	0.3	0.7	0.2	0.3
	Observe safety precaution during operation.	0.2	0.6	0.1	0.2
	Explain about Sprinkler.	0.2	0.6	0.1	0.2
	Demonstrate fitting of Sprinkler.	0.2	0.6	0.1	0.2
	Observe safety precaution during operation.	0.3	0.6	0.1	0.3
	Check performance for dimensional accuracy as per standard procedure.	0.3	0.6	0.1	0.3
	Total Marks	**2**	**5**	**1**	**2**
23. Draw, Estimate and Execute of Plumbing system. (NOS: PSC/N9443)	Explain plumbing drawing.	0.6	1	0.1	0.5
	Explain about 2D CAD.	0.6	1	0.1	0.5
	Explain Features and application for creating a drawing by 2D CAD.	0.7	2	0.2	0.5
	Check performance for dimensional accuracy as per drawing.	0.7	2	0.2	0.5

	Explain about Estimating in plumbing system as per drawing.	0.7	2	0.2	0.5
	Check Estimate as per drawing.	0.7	2	0.2	0.5
	Total Marks	**4**	**10**	**1**	**3**
24. Read and apply engineering drawings for different applications in the field of work. (NOS: ASC/N9410)	Read & interpret the information on drawings and apply in executing practical work.	4		2	
	Read & analyze the specification to ascertain the material requirement, tools and assembly/maintenance parameters.	4		2	
	Encounter drawings with missing/unspecified key information and make own calculations to fill in missing dimension/parameters to carry out the work.	4		2	
	Total Marks	**12**		**6**	
25. Demonstrate basic mathematical concepts and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: ASC/N9411)	Solve different mathematical problems	6		3	
	Explain concept of basic science related to the field of study	6		3	
	Total Marks	**12**		**6**	
Grand Total		**100**	**200**	**40**	**60**
TRAINING METHODOLOGY					
1. Plan & prepare the learners for the class using basics of educational psychology &motivational techniques. (NOS: MEP/N9401)	Implement techniques based on psychological parameters like Personality, Aptitude, Skills, values and Potentials.	1.4	4.8	0.4	0.8
	Use different experiments on theories of learning by the different psychologists and their effect in learning situation and relation with Laws of learning.	1.4	4.8	0.4	0.8
	Demonstrate on Modality Learning (Auditory, Visual and Kinesthetic modality).	1.4	4.8	0.4	0.8
	Set Questionnaire on personality development for assessing the psychological attributes.	1.4	4.8	0.4	0.8
	Motivate trainees for the training session.	1.4	4.8	0.4	0.8
	Total Marks	**7**	**24**	**2**	**4**
2. Analyze the syllabus of the Course. (NOS: MEP/N9405)	Select salient points on designing a training curriculum.	1	2.5	0.2	0.3
	Analyse a sample syllabus.	1	2.5	0.1	0.3
	Discuss Elements of skills, Outlines of a syllabus.	1	2.5	0.2	0.4
	Make project work on making break up of syllabus and list of topics - Video show/PPT of ADDIE Model.	1	2.5	0.2	0.4
	Design schedule of instructions.	1	2.5	0.1	0.3
	Construct a sample course using principles of teaching.	1	2.5	0.2	0.3
	Total Marks	**6**	**15**	**1**	**2**
3. Plan & prepare the	Set questions on different levels of learning in psychomotor domain	1.75	3.25	0.25	0.5

training session using various methods viz. 4 step method, question & questioning technique etc. (NOS: MEP/N9406)	according to Bloom Taxonomy.				
	Demonstrate the steps of imparting skills.	1.75	3.25	0.25	0.5
	Prepare lesson plan and demonstration plan using 4 Step methods.	1.75	3.25	0.25	0.5
	Use questioning techniques.	1.75	3.25	0.25	0.5
	Total Marks	**7**	**13**	**1**	**2**
4. Communicate effectively with the trainees both verbally and nonverbally. (NOS: MEP/N9407)	Identify the process of communication.	2.5	4.5	0.3	0.7
	Use verbal & non-verbal communication to convey messages, pre-listening activity and respond to them.	2	4	0.4	0.6
	Communicate effectively with the trainees in training session.	2.5	4.5	0.3	0.7
	Total Marks	**7**	**13**	**1**	**2**
5. Use Instructional Technology & facilitate the training program. (NOS: MEP/N9408)	Use various instructional Technologies viz. OHP, Digital Camera, LCD projector, smart board etc.	2.5	4.5	0.3	0.7
	Plan and design charts, transparencies, slides, posters, mock-ups etc.	2	4	0.4	0.6
	Conduct micro teaching sessions.	2.5	4.5	0.3	0.7
	Total Marks	**7**	**13**	**1**	**2**
6. Design written instructional materials and implement for imparting training. (NOS: MEP/N9409)	Plan & prepare different WIM viz. Operation sheet, Job sheet, Information Sheet, Assignment Sheet, Experiment Sheet, Experiment Sheet, Final Job Check Sheet etc.	3.5	6.5	0.5	1
	Maintain various records viz. Daily Dairy, Progress Chart, Theory &Practical records etc.	3.5	6.5	0.5	1
	Total Marks	**7**	**13**	**1**	**2**
7. Assess, evaluate and certify the tests. (NOS: MEP/N9410)	Identify different types of test & its necessity.	1	2	0.1	0.3
	Set different types of question on different levels of learning in cognitive domain according to Bloom Taxonomy.	1	2	0.2	0.3
	Set an ideal question paper & evaluate.	1.5	2.5	0.2	0.4
	Apply various evaluation techniques & marking schemes.	1.5	2.5	0.2	0.4
	Undertake competence-based assessment as per standards.	1	2	0.2	0.3
	Conduct formative assessment and summative assessment.	1	2	0.1	0.3
	Total Marks	**7**	**13**	**1**	**2**
8. Organize workshop and classroom learning observing instructional methods. (NOS: MEP/N9426)	Carry out management of Workshop &Class room.	1.75	3.25	0.25	0.5
	Demonstrate group teaching and learning.	1.75	3.25	0.25	0.5
	Explain housekeeping & safety rules in Instructional area.	1.75	3.25	0.25	0.5
	Conduct debate on quality Concept & 5'S.	1.75	3.25	0.25	0.5
	Total Marks	**7**	**13**	**1**	**2**
9. Counsel & mentor the trainees by identifying their Strength & Weaknesses. (NOS: MEP/N9428)	Handle trainee's grievances.	1	3	0.2	0.4
	Boost Morale of trainees.	1	3	0.2	0.4
	Conduct SWOT analysis for identifying their Strength & Weaknesses.	1	3	0.2	0.4
	Plan and Prepare the parameters for skills required to become a good trainer.	1	3	0.2	0.4
	Write a good CV.	1	3	0.2	0.4
	Total Marks	**5**	**15**	**1**	**2**

10. Develop Entrepreneurship skills. (NOS: MEP/N9438)	Use effective leadership Traits.	1.4	2.6	0.2	0.4
	Apply Stress management techniques.	1.4	2.6	0.2	0.4
	Plan & Use Time management techniques.	1.4	2.6	0.2	0.4
	Interpret the sequence of operation for setting up a small business from the flow sequence diagram	1.4	2.6	0.2	0.4
	Analyze the impact of quality and list the importance of quality.	1.4	2.6	0.2	0.4
	Total Marks	**7**	**13**	**1**	**2**
11. Apply ICT & Internet in training (computer-based training) and various types of Distance learning programmes. (NOS: MEP/N9439)	Use internet, Email application, Fax etc.	1	3	0.2	0.4
	Prepare transparency sheet with the help of computer.	1	3	0.2	0.4
	Prepare Slides by Power Point.	1	3	0.2	0.4
	Conduct Interactive Class on Video Conference.	1	3	0.2	0.4
	Install and commission equipments at Spokes level.	1	3	0.2	0.4
	Total Marks	**5**	**15**	**1**	**2**
12. Plan and conduct sessions to impart competency based skills and knowledge. (NOS: MEP/N9440)	Interpret one LO, QP, NOS for NSQF alignment.	1.5	3.75	0.25	0.5
	Explain learning outcomes.	1.5	3.75	0.25	0.5
	Identify different roles of NSDA, NSDC and SSC.	1.5	3.75	0.25	0.5
	Apply techniques to create and maintain a positive learning environment.	1.5	3.75	0.25	0.5
	Total Marks	**6**	**15**	**1**	**2**
13. Apply Adult Learning Principles. (NOS: MEP/N9441)	Apply adult learning in simulated environment.	0.75	1.75	0.25	0.25
	Identify various factors affecting adult learning	0.75	1.75	0.25	0.25
	Use role plays using the principles of adult learning.	0.75	1.75	0.25	0.25
	Apply techniques to create and maintain a positive learning environment.	0.75	1.75	0.25	0.25
	Total Marks	**3**	**7**	**1**	**1**
14. Develop and implement continuous professional development plan. (NOS: MEP/N9442)	Develop a professional development plan to enhance professional capabilities.	1.5	3.5	0.5	0.5
	Implement CPD in instructor career.	1.5	3.5	0.5	0.5
	Total Marks	**3**	**7**	**1**	**1**
15. Develop employability skills for the industrial needs. (NOS: MEP/N9475)	Implement sentences for different situations and rearrange words to create meaningful sentences.	3	4	1	0.7
	Exhibit communications skills to manage conflicts & handle criticism in work place.	2	3	1	0.6
	Demonstrate report to become a good entrepreneur.	3	4	1	0.7
	Total Marks	**8**	**11**	**3**	**2**
16. Develop future skills in Emerging Technology. (NOS: MEP/N9475)	Explain common types of cyber-attacks	0.7		0.2	
	Explain the applications of Data Analytics	0.7		0.2	
	Explain Artificial Intelligence and its different types.	0.6		0.1	
	Explain what AI can do and can't do	0.7		0.2	
	Applications of AI in different fields.	0.7		0.2	
	Explain Machine Learning steps	0.6		0.1	

	Explain features/types/benefits of Robotic Process Automation software tools	0.7		0.2	
	Features, benefits and applications of IoT	0.7		0.2	
	Explain types of block chain	0.6		0.1	
	Basic concepts of Cloud Computing	0.7		0.2	
	Types of 3D printing, advantages and disadvantages.	0.7		0.2	
	Basic concepts of AR/VR/XR	0.6		0.1	
	Total Marks	**8**	**0**	**2**	**0**
Grand Total		**100**	**200**	**20**	**30**

Note: Distribution of marks shown above are indicative only

Annexure: Assessment Strategy

(1) Assessment process:

Assessment and Certification of all the trainees will be carried out as per Directorate General of Training (DGT) norms for the trade theory including practical portion conducted in NSTI/IToT workshop. The assessment for the qualification is carried out by conducting formative assessments and summative assessment (end-of-year examination). The internal assessment for each learning outcome is carried out by the concerned trainer for evaluating the knowledge and skill acquired by trainees and the behavioural transformation of the trainees. This internal assessment is primarily carried out by collecting evidence of competence gained by the trainees by evaluating them at work based on assessment criteria, asking questions and initiating formative discussions to assess understanding and by evaluating records and reports, and internal assessment marks are awarded to them. Theory and practical examinations are conducted in Trade Technology, Engineering Technology and Training Methodology. The question papers for the theory Examinations contain objective type questions. The practical examination at the end of training is conducted at NSTI / IToTs and the marks are uploaded in the portal accordingly.

The marking pattern and distribution of marks for the qualification are as under:

Sl. No.	Subject		Marks	Internal Assessment	Full Marks	Pass Marks	
						Exam	Internal Assessment
1.	Trade Technology	Trade Theory	100	40	140	40	24
		Trade Practical	200	60	260	120	36
2.	Training Methodology	TM Theory	100	20	120	40	12
		TM Practical	200	30	230	120	18
Total Marks			**600**	**150**	**750**	**320**	**90**

(2) Minimum pass marks:

The minimum pass percent for Trade Practical, TM practical Examinations and Formative assessment is 60% & for all other subjects is 40%. There will be no Grace marks.

(3) Testing and certifications for the course:

Controller of examinations, DGT carries out the assessment and issues National Craft Instructor Certificates (NCIC) following the norms and guidelines issued by the Directorate from time to time.

Overall assessment strategy:

Assessment of the qualification evaluates trainees to show that they can integrate and impart knowledge, skills and values for carrying out relevant tasks as per the defined learning outcomes and assessment criteria. The trainees may choose the preferred language for assessment. The underlying principle of assessment is

fairness and transparency. While assessing the trainee, assessor is directed to assess as per the defined assessment criteria against the learning outcomes. The evidence of the competence acquired by the trainees can be obtained by conducting theory and practical examinations, observing the trainees at work, asking questions and initiating formative discussions to assess understanding and evaluating records and reports. The ultimate objective of the assessment is to assess the candidates as per the defined assessment criteria for the learning outcomes.

Specific Arrangements for assessment:

- Assessment is outcome-based.
- There are formative and summative assessments in Theory and Practical.
- Assessment is carried out in Trade Technology, Engineering Technology and Training Methodology.
- While Trade Theory and Trade Practical are used for assessing Trade-related jobs, Workshop Calculation and Science is used to test trainee's numerical skills, Drawing is used to test the ability of the trainee to draw and read sketches and Training Methodology is used to test teaching skills.
- In addition to demonstration of theory and practical knowledge, overall personality of the trainees is also assessed.

Quality assurance activities:

- Question papers are set by external paper setters/ software generated
- Evaluation of Theory Examinations in Trade, Workshop Calculation & Science, Engineering Drawing and Training Methodology is done by third-party agency.
- Trade Practical is examined by External Examiner.

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf