



QUALIFICATION FILE

TURNER

- 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: 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

1.	Qualification Name	TURNER							
2.	Sector/s	Capital Goods and Manufacturing							
3.	Type of Qualification: <input type="checkbox"/> New <input checked="" type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options <input type="checkbox"/> OEM	NQR Code & version of existing/previous qualification:	Qualification Name of existing/previous version: TURNER (CITS)						
4.	a. OEM Name b. Qualification Name (Wherever applicable)	NA							
5.	National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval)	QG-05-CG-00983-2023-V2-DGT	6. NCrF/NSQF Level: 5						
7.	Award (Certificate/Diploma/Advance Diploma/Any Other) (Wherever applicable specify multiple entry/exits also & provide details in annexure)	National Craft Instructor Certificate (NCIC)							
8.	Brief Description of the Qualification	The individual will be able to impart theoretical instructions, demonstrate practical skills, evaluate and grade trainees of Turner and related trade in ITIs/ Vocational Training Institutes, industrial workshops, etc							
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S. No.</th> <th style="width: 60%;">Academic/Skill Qualification (with Specialization - if applicable)</th> <th style="width: 30%;">Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>BE/B. Tech in Mechanical Engineering from AICTE/ UGC recognized Engineering College/ University OR 03 years Diploma in Mechanical Engineering after class 10th from AICTE/ recognized Engineering College/ University. OR Ex-serviceman from Indian Armed forces with 15 years of service in related field as per equivalency through DGR OR 10th class with 02 year NTC/NAC passed in the trade of 'Turner' + 1</td> <td>1 year relevant experience for NTC/NAC passed candidates</td> </tr> </tbody> </table>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1.	BE/B. Tech in Mechanical Engineering from AICTE/ UGC recognized Engineering College/ University OR 03 years Diploma in Mechanical Engineering after class 10th from AICTE/ recognized Engineering College/ University. OR Ex-serviceman from Indian Armed forces with 15 years of service in related field as per equivalency through DGR OR 10th class with 02 year NTC/NAC passed in the trade of 'Turner' + 1	1 year relevant experience for NTC/NAC passed candidates
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)							
1.	BE/B. Tech in Mechanical Engineering from AICTE/ UGC recognized Engineering College/ University OR 03 years Diploma in Mechanical Engineering after class 10th from AICTE/ recognized Engineering College/ University. OR Ex-serviceman from Indian Armed forces with 15 years of service in related field as per equivalency through DGR OR 10th class with 02 year NTC/NAC passed in the trade of 'Turner' + 1	1 year relevant experience for NTC/NAC passed candidates							

	<i>Supporting ABs)</i>	Website: https://dgt.gov.in/	
23.	Final Approval Date by NSQC: 25th June 2020	24. Validity Duration: 5 Yrs. from the Date of Approval	25. Next Review Date: 25th June 2025

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.	Demonstrate use of turner hand Tools used for marking, hack sawing, filing and use of precision measuring instruments applying occupational safety measures at workplace	CSC/N9446		5		20	50			70	8	20	3	6	37	
2.	Explain use of negative rake tools, power saw and surface plate for drill grinding with optimum use of resources	CSC/N9459		5		20	45			65	8	19	3	6	36	
3.	Analyse geometrical accuracies of lathe machines and demonstrate mounting and dismounting of work piece holding devices like chuck, faceplate,	CSC/N9460		5		22	60			82	9	25	3	8	44	

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	
	driving plate etc															
4.	Evaluate crankshaft turning, screw thread cutting, square and acme threading& tool grinding	CSC/N9461		5		20	50			70	8	20	3	6	37	
5.	Suggest effective solution during boring, counter boring, grooving while turning on lathe	CSC/N9461		5		10	25			35	4	11	2	3	20	
6.	Explain the need of non-conventional machining process used in industries	CSC/9495		5		6	10			16	2	4	1	1	9	
7.	Explain steel standards for parting and grinding of various shapes on lathe machine	CSC/N9462		5		10	25			35	4	11	1	3	19	
8.	Assess turning practice by offhand, at high speed and with multi-start thread using resources economically	CSC/N9461		5		12	35			47	5	15	2	4	26	
9.	Monitor assembling & disassembling of insert-type tools and implement balancing, truing, mounting, taper tuning and radius turning attachment on lathe	CSC/N9460		5		20	50			70	8	21	3	6	38	

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	
	machine															
10.	Demonstrate gauges, belt mounting, shop floor tools and process of measuring with digital outside micrometer and dial caliper	CSC/N9464		5		28	75			103	11	32	4	9	57	
11.	Demonstrate on SQC, CNC lathe machine, programming& simulation, use of CAM software, setting of Tools simulation and execution of program	CSC/N9433		5		22	55			77	9	22	3	8	41	
12.	Read and apply engineering drawing for different application in the field of work	ASC/N9411		5		40				40	12		6		18	
13.	Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study	ASC/N9410		5		40				40	12		6		18	
14.	On the Job Training			5				150		150						
Duration (in Hours) / Total Marks						30	270	480	150	900	100	200	40	60	400	
TRAINING METHODOLOGY																
15.	Plan & prepare the learners for the class	MEP/N9401		5		12	19			31	7	14	1	2	24	

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	
	using basics of educational psychology & motivational techniques.															
16.	Analyze the syllabus of the Course.	MEP/N9405		5		18	20			38	10	15	2	2	18	
17.	Plan & prepare the training session using various methods viz. 4 step method, question & questioning technique etc.	MEP/N9406		5		10	20			30	5	15	1	2	10	
18.	Communicate effectively with the trainees both verbally and nonverbally.	MEP/N9407		5		10	20			30	6	15	1	2	10	
19.	Use Instructional Technology & facilitate the training program.	MEP/N9408		5		10	15			25	5	11	1	2	10	
20.	Design written instructional materials and implement for imparting training.	MEP/N9409		5		10	15			25	6	11	1	2	10	
21.	Assess, evaluate and certify the tests.	MEP/N9410		5		10	18			28	5	13	1	2	10	
22.	Organize workshop and classroom learning observing instructional methods.	MEP/N9426		5		10	20			30	6	15	1	2	10	
23.	Counsel & mentor the trainees by identifying their Strength & Weaknesses.	MEP/N9428		5		10	20			30	5	15	1	2	10	
24.	Develop Entrepreneurship skills.	MEP/N9438		5		10	20			30	6	15	1	2	10	
25.	Apply ICT & Internet in training (computer-	MEP/N9439		5		12	20			32	7	15	2	2	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		
	based training) and various types of Distance learning programmes.																
26.	Conduct competency-based training using LO/QP/ NOS and NSQF guidelines.	MEP/N9440		5		10	20			30	6	15	1	2	10		
27.	Apply Adult Learning Principles.	MEP/N9441		5		10	18			28	5	13	1	2	10		
28.	Develop and implement continuous professional development plan.	MEP/N9442		5		10	15			25	6	11	1	2	10		
29.	Develop employability skills for the industrial needs.	MEP/N9475		5		10	14			24	6	10	1	2	10		
30.	Develop future skills in Emerging Technology.	MEP/N9476		5		15	15			30	8	11	2	2	15		
Duration (in Hours) / Total Marks						15	180	270	15	0		15	8		2		15
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) <i>(as per NCVET guidelines)</i>	<p>B.Voc/Degree in appropriate branches of Mechanical Engineering from AICTE/UGC recognized University with two years experience in relevant field. OR 03 years Diploma in appropriate branches of Mechanical 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 undergone methods of instruction course or minimum 02 years of experience in technical training institute of Indian Armed forces. OR NTC/ NAC passed in Turner trade with seven years experience in relevant field.</p> <p>Essential Qualification: National Craft Instructor Certificate (NCIC) in Turner trade, in any of the variants under DGT.</p>
2.	Master Trainer's Qualification and experience in the relevant sector (in years) <i>(as per NCVET guidelines)</i>	N/A
3.	Tools and Equipment Required for Training	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>(If "Yes", details to be provided in Annexure)</i>
4.	In Case of Revised Qualification, Details of Any Up skilling 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	<input checked="" type="checkbox"/> Same as for training <input type="checkbox"/> Yes <input type="checkbox"/> 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 <i>(Mandatory)</i>	Annexure: Evidence of Level
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	Annexure: Tools and Equipment (Lab Set-Up)
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	Annexure: Detailed Assessment Criteria
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Annexure: Assessment Strategy
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is "Blended Learning")</i>	N/A
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	Yes
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	Yes
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	Yes
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Yes
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	N/A
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	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
<p>Professional Theoretical Knowledge/Process</p>	<p>Demands Wide Range of Specialized Technical Skill, Clarity of Knowledge and Practice in Broad Range of Activity.</p> <ul style="list-style-type: none"> • Demonstrate use of turner hand Tools used for marking, hacksawing, filling and use of precision measuring instruments applying occupational safety measures at workplace. • Explain use of negative rake tools, power saw and surface plate for drill grinding with optimum use of resources. • Analyse geometrical accuracies of lathe machines and demonstrate mounting and dismounting of work piece holding devices like chuck, faceplate, driving plate etc. • Suggest effective solution during boring, counter boring, grooving while turning on lathe. 	<p>The learner demonstrates wide range of specialized technical skills, clarity of knowledge for example “Explain use of negative rake tools, power saw and surface plate for drill grinding with optimum use of resources” as indicated in the learning outcomes to achieve the tolerance levels and accuracy demanded as per the job.</p> <p>The learner explains broad range of activities as indicated in the learning outcomes like “Demonstrate use of turner hand Tools used for marking, hacksawing, filling and use of precision measuring instruments applying occupational safety measures at workplace” and “Analyse geometrical accuracies of lathe machines and demonstrate mounting and dismounting of work piece holding devices like chuck, faceplate, driving plate etc”. The learner has to apply ones knowledge of Turner trade and decide what needs to be done to identify a fault/deficiency and decide how to rectify it or plan as per requirements of industrial standards.</p> <p>Hence NSQF Level is 5for this descriptor.</p>	<p>5</p>
<p>Professional and Technical Skills/ Expertise/ Professional Knowledge</p>	<p>Factual and theoretical knowledge in broad contexts within a field of work or study.</p> <ul style="list-style-type: none"> • Cutting edge geometry of turning tools-rake angle, relief angles, positive and negative rakes and their applications, cutting forces. • Lathe cutting tools- Introduction, Classification tool nomenclature etc. • Mounting and dismounting of Driving plate, faceplate, Steady rest and follower rest - Introduction, construction & uses. • Introduction to Pedestal Grinder- its parts & 	<p>The learner requires demonstrating factual and theoretical knowledge in broad contexts within this field of work or study which is related to Turner trade which involves knowledge of Lathe cutting tools, cutting edge geometry of cutting tools etc. The learner is expected to possess knowledge about the parts and applications of Pedestal Grinder. The learner applies factual and theoretical knowledge in broad contexts within a field of work or study.</p>	<p>5</p>

	applications.	Hence NSQF Level is 5for this descriptor.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	<ul style="list-style-type: none"> Evaluate crankshaft turning, screw thread cutting, square and acme threading & tool grinding. Demonstrate part programming using CAM software Evaluate CNC programming on lathe and tool setting. Check accuracy/ correctness of job using appropriate gauge and measuring instruments. 	<p>The learning outcome for example “Evaluate crankshaft turning, screw thread cutting, square and acme threading & tool grinding” requires a range of cognitive and practical skills to generate solutions to specific problems in this field of study; then as per requirements decide which operations/procedures/tools will achieve desired result. In the learning outcome for example “Demonstrate on SQC, CNC lathe machine, programming & simulation, use of CAM software, setting of Tools simulation and execution of program” the learner is expected to plan the sequence of operations to maximum effectiveness; constantly checking and reviewing plan, etc., all of which involve problem solving and decision making.</p> <p>Hence NSQF Level is 5for this descriptor.</p>	5
Broad Learning Outcomes/Core Skill	<p>Reasonably good in mathematical calculation</p> <ul style="list-style-type: none"> Demonstrate basic mathematical concept and principles to perform practical operations. <p>Understanding of social/political environment</p> <ul style="list-style-type: none"> Explain basic science in the field of study including simple machine. <p>Collecting, Organising information and logical communication</p> <ul style="list-style-type: none"> Design written instructional materials and implement for imparting training. 	<p>The learning outcomes for example ‘Demonstrate basic mathematical concept and principles to perform practical operations’ , ‘Explain basic science in the field of study including simple machine’ display the attributes where the learner needs to display reasonably good in mathematical calculation as the learner is expected to test the skills on arithmetic, algebra, trigonometry and statistics. The learner is also expected to test skills on science in the field of study including friction, heat, temperature etc. which exhibits the understanding of social, political environment; and some skill of collecting and organising information, deliver logical communication. The learner plans and organizes assigned work and detects & resolve issues during execution in his work area.</p> <p>He/she demonstrate possible solutions and</p>	5

		<p>check tasks within the team; communicates logically.</p> <p>Hence NSQF Level is 5for this descriptor.</p>	
<p>Responsibility</p>	<ul style="list-style-type: none"> • Assess turning practice by offhand, at high speed and with multi-start thread using resources economically. • Monitor assembling & disassembling of insert-type tools and implement balancing, truing, mounting, taper tuning and radius turning attachment on lathe machine. • Demonstrate gauges, belt mounting, shop floor tools and process of measuring with digital outside micrometer and dial calliper. • Demonstrate on SQC, CNC lathe machine, programming & simulation, use of CAM software, setting of Tools simulation and execution of program. 	<p>The role of Turner is independently responsible for planning, execution and commissioning etc. for arranging, operating& maintaining various turner equipments, supervising and ensuring prescribed tolerance limits/standards followed by analysis of what needs to be done based on their understanding of various industrial processes/equipments, selection of best parameters and working practices to achieve the desired standards programming & simulation using CAM software and operation of CNC lathe machine.</p> <p>While “Monitor assembling & disassembling of insert-type tools and implement balancing, truing, mounting, taper tuning and radius turning attachment on lathe machine” shows responsibility for own work and learning as well as full responsibility for other’s works and learning.</p> <p>Hence NSQF Level is 5 for this descriptor.</p>	<p>5</p>

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment
Batch Size: 25

S No.	Name of the Tool &Equipment	Specification	Quantity
A. Hand Tools			
1.	Hammer brass	200 gm with handle	13 nos.
2.	Screw Driver set	6", 12", 18"	05 sets
3.	Spanner double ended	6mm to 32mm.	02 sets
4.	Spanner adjustable	200mm.	05 nos.
5.	Pliers combination-	size 8"	05 nos.
6.	Fire Extinguisher		02 nos.
7.	Buckets		04 nos.
8.	Safety goggles clear glass (Good Quality)		25 nos.
9.	Oil can V2pint (pressure feed system)		13 nos.
10.	Lathe Mandrels (Different Types)		1 set
11.	Revolving Centre	MT 3	13 nos.
12.	Angle Plate with slots	200mm	02 nos.
13.	Drill Drift		13 nos.
14.	Morse Taper Plug & Ring gauge	MT 0 to MT 7	02 Set each
B. INSTRUMENT AND GENERAL SHOP OUTFIT :Marking & Measuring Tools			
15.	Try Square	Blade size 150mm	05 nos.
16.	Universal surface gauge	250mm.	13 nos.
17.	Metric Feeler Gauge	0.04 mm to 0.30 mm	02 nos.
18.	Radius Gauge	1 to 7mm, 7.5to 15 & 15 to 22mm.	05 each
19.	Combination centre gauge		05 nos.
20.	Screw Pitch Gauge	Whitworth & Metric. (55° & 60°)	05 nos.
21.	Twist Drill angle gauge.		02 nos.
22.	Plain Ring and Plug Gauge	size- 12, 15, 16, 18, 20, 22, 24 and 25.	01 set
23.	Thread Plug Gauge	M-24 & M-30	02 sets
24.	Thread Ring gauge	M-24 and M-30	01 set
25.	Morse Taper Sleeves	No. 0-1, 1-2, 2-3, 3-4, 4-5.	05 sets
26.	Angle Gauge for tool grinding		02 nos.
27.	Slip Gauge	metric set -112	01 set
28.	Steel Rule	300mm	13nos.
29.	Combination set	300mm	02 nos.
30.	Dial Vernier caliper	200mm, Accuracy 0.01mm	02 nos.

31.	Scriber	150mm X 3mm.	02 nos.
32.	Prick punch	100mm	05 nos.
33.	Divider spring joint	150 mm.	05 nos.
34.	Centre punch	100mm.	02 nos.
35.	Granite Surface plate	60 x 60 cm.	05 nos.
36.	Marking table (CI)	120x120 cm.	01 no.
37.	Vee Block grade A	5 mm to 60 mm with Magnetic clamp.	02 nos.
38.	Universal Vernier Caliper	200mm.	13 nos.
39.	Vernier Height gauge	with Dial-300mm, Accuracy- 0.02mm	01 no
40.	Magnifying glass	Dia- 75 mm	02 nos.
41.	Outside Micrometer	0 to 25mm, Accuracy-0.01mm	05 nos.
42.	Three Point Internal Micrometer	Accuracy-.005mm	02 nos.
43.	Outside Micrometer	25 to 50mm, Accuracy 0.01mm	05 nos.
44.	Outside Micrometer	50 to 75mm, Accuracy 0.01mm	02 nos.
45.	Two Point Self Centering Bore Dial Gauge	Accuracy- .01mm	02 nos.
46.	Digital Outside Micrometer	range 0-25mm, Accuracy 0.001mm	02 nos.
47.	Inside Micrometer	25 to50mm, Accuracy 0.01mm	02 nos.
48.	Inside Micrometer	50 mm to 150 mm, Accuracy-0.01mm	02 nos.
49.	Vernier Bevel Protractor	300 mm blade.	05 nos.
50.	Outside Vernier Micrometer	0-25mm, Accuracy 0.001mm	02 nos.
51.	Outside Vernier Micrometer	25-50mm, Accuracy 0.001mm	02 nos.
52.	Digital Vernier Caliper	size 200mm, Accuracy .01mm	02 nos.
53.	Screw Thread Micrometer interchangeable with anvils		02 nos.
54.	Dial Test Indicator with Magnetic base both plunger and lever type	0.01 mm	02 nos.
55.	Sine Bar with Center distance	200 mm	02 nos.
C. GENERAL SHOP OUTFIT			
56.	Chisel cold	flat 20mm x150mm	02 nos.
57.	Hacksaw fixed	200mm (Pistol grip)	13 nos.
58.	File flat rough	300mm	05 nos.
59.	File flat 2 nd cut	250mm	05 nos.
60.	File flat smooth	250mm	05 nos.
61.	File half round 2 nd cut	250mm	05 nos.
62.	File half round smooth.	150 mm	05 nos.
63.	Twist Drill straight shank	1 to 12 mm, step range 1mm	02 sets
64.	Drill Chuck with key	Cap. - 12mm	05 nos.
65.	Twist Drill Taper shank	1 to 12 mm, step range 0.5mm	02 sets
66.	Tap Wrench (Adjustable)		05 nos.

67.	Die stock different size		05 nos.
68.	Tap & Die Metric set	6mm to 25mm	02 sets
69.	Reamer machine straight flute	6 to 25mm in step of 1 mm	01 set
70.	Reamer Adjustable	10 to 20mm	01 set
71.	Hand Chaser (External)	M-12 & M-16	02 sets
72.	Hand Chaser (Internal)	M-12 & M-16	02 sets
73.	Combination Drill	A-3 & A-5	05 sets
74.	Knurling tool revolving head		13 nos.
75.	Tool Holder RH & straight	3/8" square tool bit	05 nos.
76.	Parting Tool Holder		05 nos.
77.	Boring Tool holder	6mm sq. hole	05 nos.
ENERAL MACHINERY SHOPOUTFIT			
78.	(a)CNC turn Centre with minimum specification as (b) CAM software (Master Cam)	Chuck size: 135mm, Between centre distance: 250mm, Travel in X: 100mm, Travel in Z: 200mm, No. of tool stations: 8 station turret, Spindle power: 3.7kW (continuous rating), preferably with popular control system like Fanuc/Sinumeric etc. along with motorized coolant system.	02nos.
79.	SS and SC centre lathe (all geared) with having minimum specification as:	Centre height 150 mm and centre distance 1000 mm along with 4 jaw and 3 jaw chucks, auto feed system, safety guard, motorized coolant system and lighting arrangement.	18 nos.
80.	Lathe Tool Room SS and SC centre lathe (all geared) with having minimum specification as	Centre height 1 50 mm and centre distance 1000 mm along with 4 jaw and 3 jaw chucks, auto feed system, safety guard, motorized coolant system and lighting arrangement.	02 nos.
81.	Grinding Machine Pedestal Type D.E. with wheel guard and flanges.		02 nos.
82.	Tool Room SS and SC centre lathe (all geared) with having minimum specification as:	Centre height 150 mm and centre distance 1000 mm along with 4 jaw and 3 jaw chucks, auto feed system, safety guard, motorized coolant system and lighting arrangement.	02 nos.
83.	Drilling Machine pillar type- motorized	Up -12-mm. cap. with drill chuck & key.	01 no.
84.	Power saw machine	hydraulic type (24" blade size)	01 no.
85.	Steel Cupboard	with 8 pigeon lockers	03 nos.
86.	Work bench for fitters	with two vices of 100mm	02 nos.
87.	Steel cupboard	180x90x45cm	02 nos.
88.	Steel cupboard	120x60x45cm	02 nos.

89.	Test mandrel/test bar-	400mm	02 nos.
90.	First aid box.		01 no.
91.	Multimedia teach ware/ courseware for CNC technology and interactive CNC part programming software for turning & milling with virtual machine operation and simulation using popular operation control system such as Fanuc, Siemens, etc.	Web-based or licensed based)	1 set
92.	PCs with MS-Windows to run above simulation software, networked on LAN.	CPU: 32/64 Bit i3/i5/i7 or latest processor, Speed: 3 GHz or Higher. RAM:-4 GB DDR-III or Higher, Wi-Fi Enabled. Network Card: Integrated Gigabit Ethernet, with USB Mouse, USB Keyboard and Monitor (Min. 17 Inch. Licensed Operating System and Antivirus compatible with trade related software	13 nos.
93.	Computer Table		13 nos.
94.	Computer Chairs		25 nos.

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.							
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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	<input type="checkbox"/> Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	<input type="checkbox"/> Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
3	<input type="checkbox"/> Showing Practical Demonstrations to the learners		
4	<input type="checkbox"/> Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	<input type="checkbox"/> Tutorials/ Assignments/ Drill/ Practice		
6	<input type="checkbox"/> Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	<input type="checkbox"/> 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. Demonstrate use of turner hand Tools used for marking, hacksawing, filling and use of precision measuring instruments applying occupational safety measures at workplace. (NOS: CSC/N9446)	Demonstrate Hand Tools for different turner operations.	1.5	3.5	0.5	1
	Demonstrate basic turner operations viz., Hacksawing, filing, drilling etc to close tolerance as per specification to make the job.	1.5	3.5	0.5	1
	Ensure safety procedure during above operation as per standard norms and company guidelines.	1.5	3.5	0.5	1
	Monitor measurements on different precision measuring instruments.	1	3	0.5	1
	Check for dimensional accuracy as per standard procedure.	1	3	0.5	1
	Instruct to avoid waste, ascertain unused materials and components for disposal, store these in an environmentally appropriate manner and prepare for disposal.	1.5	3.5	0.5	1
	Total Marks	8	20	3	6
2. Explain use of negative rake tools, power saw and surface plate for drill grinding with optimum use of resources. (NOS: CSC/N9459)	Explain positive & negative rakes and their applications.	1.5	3	0.5	1
	Demonstrate and Grind cutting tools.	1.5	3	0.5	1
	Demonstrate power saw and drills using surface plates.	1.5	3.5	0.5	1
	Demonstrate tools grinding, side cutting tools, offset turning tools.	1.5	3.5	0.5	1
	Explain use of parting tools.	1	3	0.5	1
	Instruct waste avoidance and environment friendly disposal of wastes.	1	3	0.5	1
	Total Marks	8	19	3	6
3. Analyse geometrical accuracies of lathe machines and demonstrate mounting and dismounting of work	Demonstrate cutting tool materials and accessories used on lathe machine as per the specification and their application.	1	3	0.3	0.8
	Plan for testing alignment of lathe.	0.5	2	0.3	0.8
	Demonstrate mounting and dismounting of lathe chuck.	1	3	0.3	0.8
	Mount and explain appropriate lathe accessories to set up a	1	2	0.3	0.8

piece holding devices like chuck, faceplate, driving plate etc. (NOS: CSC/N9460)	job for machining.				
	Demonstrate plain turning between center and evaluate center axis alignment.	1	3	0.3	0.8
	Evaluate taper turning using swivelling compound slide.	1	3	0.3	0.8
	Check taper angel by bevel protector and sine bar.	0.5	2	0.3	0.8
	Analyse eccentric marking using vernier height gauge.	1	2	0.3	0.8
	Analyse accuracy/ correctness of lathe using appropriate gauge and measuring instruments.	1	3	0.3	0.8
	Check compliance with safety rules when the above operations are being performed.	1	2	0.3	0.8
Total Marks		9	25	3	8
4. Evaluate crankshaft turning, screw thread cutting, square and acme threading& tool grinding. (NOS:CSC/N9461)	Evaluate appropriate method to produce components with crankshaft turning.	2	4	0.6	1
	Monitor appropriate tools used for generating required thread form.	2	4	0.6	1
	Demonstrate different machining and threading (Square& acme) parameters as per requirement.	2	4	0.6	2
	Check accuracy/ correctness of job using appropriate gauge and measuring instruments.	1	4	0.6	1
	Monitor and maintain all records for further assessment.	1	4	0.6	1
Total Marks		8	20	3	6
5. Suggest effective solution during boring, counter boring, grooving while turning on lathe. (NOS: CSC/N9461)	Demonstrate and monitor different boring (Plain, stepped & eccentric).	1	3	0.5	1
	Demonstrate and measure with instruments/ gauges as per drawing.	1	3	0.5	0.5
	Demonstrate turning operation using index able inserts.	1	3	0.5	1
	Check compliance with safety rules when the above operations are being performed.	1	2	0.5	0.5
Total Marks		4	11	2	3
6. Explain the need of non-conventional machining process used in industries. (NOS: CSC/9495)	Facilitate about the various non-conventional machining processes.	0.5	1	0.25	0.25
	Demonstrate non-conventional machines used in Turner job.	1	2	0.50	0.50
	Explain the process of EDM, ECM, USM etc.	0.5	1	0.25	0.25
Total Marks		2	4	1	1
7. Explain steel standards for parting and grinding of various shapes on lathe machine.	Explain Indian and international Steel standards -BIS, DIN, EN, JIS, AISI.	1	3	0.25	1
	Classify between various metals and alloys.	1	2	0.25	0.5
	Explain properties of metals that influence machinability.	1	3	0.25	0.5

(NOS: CSC/N9462)	Demonstrate parting off and grinding of various shapes.	1	3	0.25	1
	Total Marks	4	11	1	3
8. Assess turning practice by offhand, at high speed and with multi-start thread using resources economically. (NOS:CSC/N9461)	Explain Machinability classification in cutting tool catalogs - P,M,K,N,S,H.	1	3	0.4	0.5
	Demonstrate and perform Multi-start thread cutting (LH/RH).	1	3	0.4	1
	Demonstrate turning by offhand and at high speed using Tungsten carbide.	1	3	0.4	1
	Monitor cutting speed, machining time and depth of cut-calculation.	1	3	0.4	1
	Instruct to use resources optimally to reduce unnecessary wastages.	1	3	0.4	0.5
	Total Marks	5	15	2	4
9. Monitor assembling & disassembling of insert-type tools and implement balancing, truing, mounting, taper turning and radius turning attachment on lathe machine. (NOS: CSC/N9460)	Plan, identify, assemble and disassemble all the part components as per the guide lines given in the drawing.	2	5	0.5	1.5
	Demonstrate balancing, truing, mounting and dressing of grinding wheel.	2	6	1	2
	Monitor boring and stepped boring (within +/-0.02mm).	2	5	1	1.5
	Mentoring and solve problems during the above operations.	2	5	0.5	1
	Total Marks	8	21	3	6
10. Demonstrate gauges, belt mounting, shop floor tools and process of measuring with digital outside micrometer and dial calliper. (NOS: CSC/N9464)	Explain Limit Gauges and slip gauges construction, their types and uses.	2	5	0.5	2
	Monitor belt mounting checking alignment.	2	5	0.5	1
	Demonstrate jigs, fixtures and their parts used in workshop.	2	6	1	2
	Explain V-thread fitting and shop floor demonstration on types of bearing.	2	6	1	2
	Supervise measurement with Digital outside Micrometer and dial calliper.	2	5	0.5	1
	Judge and Limit, Fit-and tolerance as per B.I.S: 919.	1	5	0.5	1
	Total Marks	11	32	4	9
11. Demonstrate on SQC, CNC lathe machine, programming & simulation, use of CAM software, setting of Tools simulation and execution of program. (NOS: CSC/N9433)	Demonstrate and execute part programme as per drawing and simulate for it's correctness with appropriate software.	1	2	0.34	1
	Demonstrate SQC by determining sample size and quality for a batch of actual parts of any type.	1	3	0.34	1
	Explain different parts & different drives of CNC lathe machine.	1	2	0.33	1
	Evaluate manual part programming and its simulation.	1	3	0.33	1
	Check the process sequence based on manufacturer's tool	1	2	0.33	1

	Catalogue.				
	Demonstrate part programming using CAM software.	1	3	0.34	1
	Evaluate CNC programming on lathe and tool setting.	1	2	0.33	
	Demonstrate and select appropriate method to produce various components.	1	3	0.33	1
	Check accuracy/ correctness of job using appropriate gauge and measuring instruments.	1	2	0.33	1
	Total Marks	9	22	3	8
12. Read and apply engineering drawing for different application in the field of work. (NOS: PSS/N9411)	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	
13. Demonstrate basic mathematical concept and principles to perform practical operations. Understand and explain basic science in the field of study. (NOS: PSS/N9412)	Solve different mathematical problems	6		3	
	Explain concept of basic science related to the field of study	6		3	
	Total Marks	12		6	
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.	2	3	0.4	0.4
	Use different experiments on theories of learning by the different psychologists and their effect in learning situation and relation with Laws of learning.	2	3	0.4	0.4
	Demonstrate on Modality Learning (Auditory, Visual and Kinesthetic modality).	2	3	0.4	0.4
	Set Questionnaire on personality development for assessing the psychological attributes.	2	3	0.4	0.4
	Motivate trainees for the training session.	2	3	0.4	0.4
	Total Marks	10	15	2	2
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.	0.5	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.	0.5	2.5	0.1	0.3
	Construct a sample course using principles of teaching.	1	2.5	0.2	0.3
	Total Marks	5	15	1	2
3. Plan & prepare the training session using various methods viz. 4 step method, question & questioning technique etc. (NOS: MEP/N9406)	Set questions on different levels of learning in psychomotor domain according to Bloom Taxonomy.	1.5	3.75	0.25	0.5
	Demonstrate the steps of imparting skills.	1.5	3.75	0.25	0.5
	Prepare lesson plan and demonstration plan using 4 Step methods.	1.5	3.75	0.25	0.5
	Use questioning techniques.	1.5	3.75	0.25	0.5
	Total Marks	6	15	1	2
4. Communicate effectively with the trainees both verbally and nonverbally. (NOS: MEP/N9407)	Identify the process of communication.	1.5	3.5	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.	1.5	3.5	0.3	0.7
	Total Marks	5	11	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	3.5	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	3.5	0.3	0.7
	Total Marks	6	11	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.	2.5	6.5	0.5	1
	Maintain various records viz. Daily Dairy, Progress Chart, Theory & Practical records etc.	2.5	6.5	0.5	1
	Total Marks	5	13	1	2
7. Assess, evaluate and certify the tests. (NOS: MEP/N9410)	Identify different types of test & its necessity.	1	2.5	0.1	0.3
	Set different types of question on different levels of learning in cognitive domain according to Bloom Taxonomy.	1	2.5	0.2	0.3
	Set an ideal question paper & evaluate.	1	2.5	0.2	0.4
	Apply various evaluation techniques & marking schemes.	1	2.5	0.2	0.4
	Undertake competence-based assessment as per standards.	1	2.5	0.2	0.3
	Conduct formative assessment and summative assessment.	1	2.5	0.1	0.3
	Total Marks	6	15	1	2
8. Organize workshop and	Carry out management of Workshop & Class room.	1.25	3.75	0.25	0.5

classroom learning observing instructional methods. (NOS: MEP/N9426)	Demonstrate group teaching and learning.	1.25	3.75	0.25	0.5
	Explain housekeeping & safety rules in Instructional area.	1.25	3.75	0.25	0.5
	Conduct debate on quality Concept & 5'S.	1.25	3.75	0.25	0.5
	Total Marks	5	15	1	2
9. Counsel & mentor the trainees by identifying their Strength & Weaknesses. (NOS: MEP/N9428)	Handle trainee's grievances.	1.2	3	0.2	0.4
	Boost Morale of trainees.	1.2	3	0.2	0.4
	Conduct SWOT analysis for identifying their Strength & Weaknesses.	1.2	3	0.2	0.4
	Plan and Prepare the parameters for skills required to become a good trainer.	1.2	3	0.2	0.4
	Write a good CV.	1.2	3	0.2	0.4
	Total Marks	6	15	1	2
10. Develop Entrepreneurship skills. (NOS: MEP/N9438)	Use effective leadership Traits.	1.4	3	0.4	0.4
	Apply Stress management techniques.	1.4	3	0.4	0.4
	Plan & Use Time management techniques.	1.4	3	0.4	0.4
	Interpret the sequence of operation for setting up a small business from the flow sequence diagram	1.4	3	0.4	0.4
	Analyze the impact of quality and list the importance of quality.	1.4	3	0.4	0.4
	Total Marks	7	15	2	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.	1.2	3	0.2	0.4
	Prepare transparency sheet with the help of computer.	1.2	3	0.2	0.4
	Prepare Slides by Power Point.	1.2	3	0.2	0.4
	Conduct Interactive Class on Video Conference.	1.2	3	0.2	0.4
	Install and commission equipments at Spokes level.	1.2	3	0.2	0.4
	Total Marks	6	15	1	2
12. Conduct competency-based training using LO/ QP/ NOS and NSQF guidelines. (NOS: MEP/N9440)	Interpret one LO, QP, NOS for NSQF alignment.	1.25	3.25	0.25	0.5
	Explain learning outcomes.	1.25	3.25	0.25	0.5
	Identify different roles of NSDA, NSDC and SSC.	1.25	3.25	0.25	0.5
	Apply techniques to create and maintain a positive learning environment.	1.25	3.25	0.25	0.5
	Total Marks	5	13	1	2
13. Apply Adult Learning Principles. (NOS: MEP/N9441)	Apply adult learning in simulated environment.	1.5	2.75	0.25	0.5
	Identify various factors affecting adult learning	1.5	2.75	0.25	0.5
	Use role plays using the principles of adult learning.	1.5	2.75	0.25	0.5
	Apply techniques to create and maintain a positive learning	1.5	2.75	0.25	0.5

	environment.				
	Total Marks	6	11	1	2
14. Develop and implement continuous professional development plan. (NOS: MEP/N9442)	Develop a professional development plan to enhance professional capabilities.	3	5	0.5	1
	Implement CPD in instructor career.	3	5	0.5	1
	Total Marks	6	10	1	2
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	0.7	0.7
	Exhibit communications skills to manage conflicts & handle criticism in work place.	2	3	0.6	0.6
	Demonstrate report to become a good entrepreneur.	3	4	0.7	0.7
	Total Marks	8	11	2	2
16. Develop future skills in Emerging Technology. (NOS: MEP/N9475)	Explain common types of cyber-attacks	0.7	0	0.2	0
	Explain the applications of Data Analytics	0.7	0	0.2	0
	Explain Artificial Intelligence and its different types.	0.6	0	0.1	0
	Explain what AI can do and can't do	0.7	0	0.2	0
	Applications of AI in different fields.	0.7	0	0.2	0
	Explain Machine Learning steps	0.6	0	0.1	0
	Explain features/types/benefits of Robotic Process Automation software tools	0.7	0	0.2	0
	Features, benefits and applications of IoT	0.7	0	0.2	0
	Explain types of block chain	0.6	0	0.1	0
	Basic concepts of Cloud Computing	0.7	0	0.2	0
	Types of 3D printing, advantages and disadvantages.	0.7	0	0.2	0
	Basic concepts of AR/VR/XR	0.6	0	0.1	0
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	40	140	40	24
		Trade Practical	200	260	120	36
2.	Training Methodology	TM Theory	20	120	40	12
		TM Practical	200	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