QUALIFICATION FILE – Standalone NOS

Medical Software services

☐ Horizontal/Generic ☒ Vertical/Specialization

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

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

NCrF/NSQF Level: 4

Submitted By:

Healthcare Sector Skill Council

Office No. 520-521, 5th Floor, DLF Tower A, Jasola, New Delhi - 110025, India

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Section 1: Basic Details

<table>
<tr><td>1.</td><td>NOS-Qualification Name</td><td colspan="2">Medical Software services</td></tr>
<tr><td>2.</td><td>Sector/s</td><td colspan="2">Healthcare</td></tr>
<tr><td>3.</td><td>Type of Qualification ☒ New ☐ Revised</td><td>NQR Code & version of the existing /previous qualification: (change to previous, once approved) NG-04-HE-03779-2025-V1-HSSC</td><td>Qualification Name of the existing/previous version: (previous, once approved) Medical Software services</td></tr>
<tr><td>4.</td><td>National Qualification Register (NQR) Code & Version (Will be issued after NSQC approval.)</td><td>NG-04-HE-03779-2025-V1-HSSC</td><td>5. NCrF/NSQF Level: 4</td></tr>
<tr><td>6.</td><td>Brief Description of the Standalone NOS</td><td colspan="2">This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for Medical Software. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.</td></tr>
<tr><td>7.</td><td>Eligibility Criteria for Entry for a 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>Relevant Experience (with Specialization - if applicable)</th></tr>
<tr><td>1</td><td>12th grade pass or equivalent</td><td>1.5 years of experience in biomedical instrumentation services</td></tr>
<tr><td>2</td><td>Previous relevant Qualification of NSQF Level 4</td><td>1.5-year of experience in biomedical instrumentation services</td></tr>
</table>
b. Age <Please specify age only in case of any legal restrictions>: NA</td></tr>
<tr><td>8.</td><td>Credits Assigned to this NOS-Qualification, Subject to Assessment (as per National Credit Framework (NCrF))</td><td>3</td><td>9. Common Cost Norm Category (I/II/III) (wherever applicable): I</td></tr>
<tr><td>10.</td><td>Any Licensing Requirements for Undertaking Training on This Qualification (wherever applicable)</td><td colspan="2">NA</td></tr>
</table>

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<table>
<tr><td>11.</td><td>Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</td><td>☒ Offline Only ☐ Online Only ☐ Blended
<table><tr><th>Training Delivery Mode</th><th>Theory (Hours)</th><th>Practical (Hours)</th><th>OJT (Hours)</th><th>Total (Hours)</th></tr><tr><td>Classroom (offline)</td><td>30</td><td>30</td><td>30</td><td>90</td></tr><tr><td>Online</td><td></td><td></td><td></td><td></td></tr></table>(Refer Blended Learning Annexure for details)</td></tr>
<tr><td>12.</td><td>Assessment Criteria</td><td><table><tr><th>Theory (Marks)</th><th>Practical (Marks)</th><th>Project (Marks)</th><th>Viva (Marks)</th><th>Total (Marks)</th><th>Passing %age</th></tr><tr><td>70</td><td>100</td><td>75</td><td>100</td><td>345</td><td>70</td></tr></table></td></tr>
<tr><td>13.</td><td>Is the NOS Amenable to Persons with Disability</td><td>☐ Yes ☒ No If “Yes”, specify applicable type of Disability:</td></tr>
<tr><td>14.</td><td>Progression Path After Attaining the Qualification, wherever applicable (Please show Professional and Academic progression)</td><td>NA</td></tr>
<tr><td>15.</td><td>How participation of women will be encouraged?</td><td>Healthcare is a field where equal opportunity and participation of women is being given as patients could belong to all genders.</td></tr>
<tr><td>16.</td><td>Other Indian languages in which the Qualification & Model Curriculum are being submitted</td><td>Hindi</td></tr>
<tr><td>17.</td><td>Is similar NOS available on NQR-if yes, justification for this qualification</td><td>☐ Yes ☒ No URLs of similar Qualifications:</td></tr>
<tr><td>18.</td><td>Name and Contact Details Submitting / Awarding Body SPOC
(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</td><td>Name: Mr. Ashish Jain
Email: ashish.jain@healthcare-ssc.in
Contact No.: 011-40505850,011 41017346
Website: www.healthcare-ssc.in</td></tr>
</table>

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19.	Final Approval Date by NSQC: 18/02/2025	20. Validity Duration: 3 years	21. Next Review Date: 18/02/2028

Section 2: Training Related

1.	**Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	BE/B.Tech (Bio-medical Engineering) with 1 year of relevant industry experience Or B.SC. with subject in Bio-medical Instrumentation with 2 year of relevant industry experience Or BE/B.Tech (Electrical/ Mechanical Engineering/Electronic Engineering/Equivalent) with 3 years of relevant industry experience in Bio-medical Instrumentation
2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	BE/B.Tech (Bio-medical Engineering) with 2 year of relevant industry experience and 1 year of teaching experience Or B.SC. with subject in Bio-medical Instrumentation with 3 year of relevant industry experience and 1 year of teaching experience Or BE/B.Tech (Electrical/ Mechanical Engineering/Electronic Engineering/Equivalent) with 4 years of relevant industry experience in Bio-medical Instrumentation and 1 year of teaching experience
3.	**Tools and Equipment Required for the Training**	☒Yes ☐No *(If "Yes", details to be provided in Annexure)*
4.	**In Case of Revised NOS, details of Any Upskilling Required for Trainer**	

Section 3: Assessment Related

1.	**Assessor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	BE/B.Tech (Bio-medical Engineering) with 1 year of relevant industry experience

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		Or B.SC. with subject in Bio-medical Instrumentation with 2 year of relevant industry experience Or BE/B.Tech (Electrical/ Mechanical Engineering/Electronic Engineering/Equivalent) with 3 years of relevant industry experience in Bio-medical Instrumentation
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines), (wherever applicable)*	Diploma/Graduate
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	BE/B.Tech (Bio-medical Engineering) with 2 year of relevant industry experience and 1 year of teaching experience Or B.SC. with subject in Bio-medical Instrumentation with 3 year of relevant industry experience and 1 year of teaching experience Or BE/B.Tech (Electrical/ Mechanical Engineering/Electronic Engineering/Equivalent) with 4 years of relevant industry experience in Bio-medical Instrumentation and 1 year of teaching experience
4.	**Assessment Mode** *(Specify the assessment mode)*	Online/Blended
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)*

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Section 4: Evidence of the Need for the Standalone NOS

Provide Annexure/Supporting documents name.

1.	Government /Industry initiatives/ requirement (Yes/No): Yes (National Medical Device Policy 2023 highlights the skilled workforce for medical devices)
2.	Number of Industry validation provided: *23*
3.	Estimated number of people to be trained: *200*
4.	Evidence of Concurrence/Consultation with Line/State Departments (In case of regulated sectors): (Yes/No): *Awaited* If "No", why: Sent mail to MoHFW on 6th December 2024. Reminder mail dated 24th January 2025

Section 5: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	**Annexure:** NCrF/NSQF level justification based on NCrF/NSQF descriptors *(Mandatory)*	Yes
2.	**Annexure:** List of tools and equipment relevant for NOS *(Mandatory, except in case of online course)*	Yes
3.	**Annexure:** Performance and Assessment Criteria *(Mandatory)*	*Yes*
4.	**Annexure:** Assessment Strategy *(Mandatory)*	*Yes*

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5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is Blended Learning)*	*NA*
6.	**Annexure:** Acronym and Glossary *(Optional)*	*Yes*
7.	**Annexure/Supporting Document:** Standalone NOS-Performance Criteria Details Annexure/Document with PC-wise detailing as per NOS format (Mandatory- Public view)	*Yes*
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	*Yes*

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	**Possess specialized knowledge of procedures employed in both routine and non-routine contexts such as:** • Differentiate between normal and abnormal functioning of the defined medical equipment/medical devices. • Steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications • The basic features, specifications, functioning, risk category and operation of the defined medical equipment/medical devices.	• They have complete knowledge of concept of time required for delivery, and Quality for a range of issues. • They have knowledge of collecting and interpreting the available information, drawing conclusions & communicating the same. • They understand the financial and feasibility aspect of various work/ solutions options	4

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	• The concepts of delivery, installation and set-up of the defined medical equipment/devices. • The concepts of post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly. • How to conduct scheduled calibration and periodic preventive maintenance • How to maintain inventory and supply chain of parts and supplies • How to diagnose, repair and provide on-call and on-site assistance for equipment malfunctions. • How to schedule and oversee third party repair and maintenance work • Safety procedures while working with the equipment and at the workplace. • They have specialized operational knowledge and understanding of the work in defined medical equipment/devices.	Refer to the evidences provided in the adjacent column. Hence it falls under Level 4.	
Professional and Technical Skills/ Expertise/ Professional Knowledge	**Possesses specialized professional and technical skills:** • Install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for defined medical equipment/medical devices.	• The individuals can apply the required knowledge for successfully implementing or applying techniques/ processes • The individuals can clearly identify the relevant tools; and have advanced	4

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	• Provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain. • Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions. • Schedule and oversee third party repair and maintenance work • Provide troubleshooting. • Apply the principles of medical software equipment and devices during their inspection, performance evaluation, calibration, testing, etc.	knowledge of defined equipment/devices in most routine/ non-routine contexts. • They possess skill to deliver job/ work with the required precision and in the estimated timelines. • They possess capabilities of carrying out a choice of processes and procedures within the range of familiar / unfamiliar contexts. Refer to the evidences provided in the adjacent column. Hence it falls under Level 4.	
Employment Readiness & Entrepreneurship **Skills & Mind-set/Professional Skill**	**Possesses much broader Employability Skills:** • Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc. • Perform installation and setting-up of the defined medical equipment and devices. • Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices. • Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.	• Possess understanding of career planning, digital skills, financial and legal literacy, good Communication skills, both oral and written; Advanced Numeracy skills, Skills for accurate workshop/ mathematical calculation and estimations, and understanding of arithmetic and algebraic principles. • Highly skilled and versatile professional with proficiency in employability skills including communication, Team readiness, and digital and financial literacy.	4

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	• Manage work efficiently in professional practice of bio-medical instrumentation services • Demonstrate technical and communication skills while facilitating biomedical instrumentation services for medical equipment	Refer to the evidences provided in the adjacent column. Hence it falls under Level 4.	
Broad Learning Outcomes/Core Skill	**Executing specialized tasks with minimal supervision, applying technical skills and problem-solving with clarity.** • Prepare work-plan for the installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices indicating the deliverables, timelines, requisites, involved personnel, supportive equipment, tools, resources, and regulatory pre-requisites. • Prepare work orders depicting various specifications related to the defined medical equipment and devices. • Perform periodic calibration, repair, maintenance and troubleshooting of the defined medical equipment and devices reviewing the service manuals and circuit diagrams. • Facilitating the delivery, installation and set-up of the defined medical equipment and devices.	The Medical Equipment Assistant should have written and oral communication skills and should be able to solve basic arithmetic and algebraic principles, also having understood social and natural environment. Refer to the evidences provided in the adjacent column. Hence it falls under Level 4.	4
Responsibility	**Takes complete responsibility for delivery and quality of own work and output and shares responsibility for the group tasks:**	Individually accountable, collectively responsible; Capable and confident in non-standard and non-routine tasks.	4

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	• Install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for defined medical equipment/medical devices. • Provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain. • Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions. • Schedule and oversee third party repair and maintenance work • Provide troubleshooting.	Refer to the evidences provided in the adjacent column. Hence it falls under Level 4.	

Annexure: Tools and Equipment (lab set-up)

List of Tools and Equipment

Batch Size:

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1	Conductor	Nos	1
2	Semiconductor	Nos	1
3	Insulator	Nos	1
4	Microprocessor	Nos	1
5	Inductors	Nos	1
6	Motor	Nos	1

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7	Drilling Machine	Nos	1
8	Suction apparatus and its pipelines	Nos	1
9	Connectors	Nos	1
10	Medical Softwares as per CDSCO guidelines	Nos	1 (each equipment)
11	Hand Tools Kit with Multimeter	Nos	1
12	O2 meter	Nos	1
13	Watt Meter	Nos	1
14	Pressure Meters	Nos	1
15	PPE Kit	Kit	4
16	Hand Sanitizer	Nos	2
17	Computers/ Laptops	Nos	2
18	Isopropyl Solution	Nos	2

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. AV Aids
2. Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed)
   (all software should either be latest version or one/two version below)
3. UPS
4. Scanner cum Printer
5. Computer Tables
6. Computer Chairs
7. LCD Projector

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8. White Board/Smart Board 1200mm x 900mm
9. Marker
10. Duster
11. Charts
12. Models
13. Flip Chart

Annexure: Industry Validations Summary

S.No	Organization	Name of Representative	Designation	City/State
1	Marengo Asia Hospitals	Lt Gen AK Das	Group Medical Director	Faridabad, Haryana
2	Kara Vision	Dr. Ashok Kumar Nanda	Director	Bhubaneswar, Odisha
3	Manipal Hospital	Rajashree Upadhyaya	Unit Head- Operation	Bhubaneswar, Odisha
4	SUM Hospital	Prof. Dr. A K Mahapatra	Vice Chancellor	Bhubaneswar, Odisha
5	HCG Panda care	Dr.Subraham Pany	Medical Admin Head	Bhubaneswar, Odisha
6	Sun Hospital	Dr. Deepak Mitra	CMD	Cuttack, Odisha
7	The Neotia University	Dr. Soumen Mukherjee	Associate Professor & Dean	Kolkata, West Bengal
8	Med Institute of Medical Gas Technology Pvt	Dr. Justin Joseph	Chief Technical Advisor (MIMGT), & Postdoctoral Scientist (Centre for Brain research, IISc, Bangalore)	Kochi, Kerala
9	Mass Biomedicals Private Limited	Mr. Snehashis Chakraborty	Managing Director	Delhi
10	Sree Mahalakshmi Technology Solutions	Mrs. Malar Vizhi	Director	Coimbatore, Tamil Nadu
11	Bhaarath Medical College and Hospital	S. Selvaraj	Biomedical Engineer- manager	Chennai, Tamil Nadu
12	Institute of Liver and Biliary Disease (ILBS)	Sarvpriya Singh	Biomedical Engineer- II	New Delhi
13	Geomed Medical Equipment Services	George wellesly M	Senior biomedical engineer	Trichy, Tamilnadu

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14	Foundation for Innovations in Health	Prof (Dr.) Satadal Saha	President	Kolkata, West Bengal
15	BVG India Ltd.	Dr Meghana Zende	Head-EMS Training	Maharashtra
16	AIIMS Delhi	Dr Rakesh Garg	Professor	Delhi
17	AIIMS, Raipur, Chhattisgarh	Dr Atul Jindal	Professor	Raipur, Chhattisgarh
18	Delhi Child Heart Center	Dr Vikas Kohli	Director	New Delhi
19	Maharaja Agrasen Hospital, Punjabi Bagh	Dr Deepak Singla	Medical Director	New Delhi
20	Shri Aurobindo Institute of Medical Sciences (SAIMS)	Dr Vinod Bhandari	Founder Chairman	Madhya Pradesh
21	ARAVIND EYE HOSPITAL & POST GRADUATE INSTITUTE OF OPHTHALMOLOGY	DR. R. BANU SHREE	HEAD OF THE GENERAL PHYSICIAN DEPARTMENT	Tamil Nadu
22	Keshayurved Hair & Skin Care Pvt.Ltd.	Dr.Vivek Ambare	Consultant, Keshayurved	Pune, Maharashtra
23	Keshayurved Hair & Skin Care Pvt.Ltd.	Dr.Harish Patankar	Director, Keshayurved	Pune, Maharashtra

Annexure: Training Details

Training Projections:

Year	Estimated Training # of Total Candidates	Estimated training # of Women	Estimated training # of People with Disability
2025-2026	20	NA	NA
2026-2027	80	NA	NA
2027-2028	100	NA	NA

Data to be provided year-wise for next 3 years.

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

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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 NOS	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/ Candidate Training		

Annexure: Standalone NOS- Performance Criteria details

1. **Description:** This is an upskilling course to prepare individuals with skills to install, set-up, repair, maintain, calibrate and provide biomedical instrumentation Services for the defined medical equipment and devices. They would also be able to provide post-installation instructions to hospital/facility staff along with management of inventory, documentation and supply chain.

2. **Scope:**

The scope covers the following:

- Perform installation and setting-up of the defined medical equipment and devices.
- Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.
- Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

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3. Elements and Performance Criteria

Perform installation and setting-up of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

PC 1 Plan the bio-medical instrumentation set-up of defined medical equipment and devices as per the consumer demand/specifications in terms of the inclusions, exclusions and mandatory medical equipment, support equipment/tools, different types of resources and regulatory requirements.

PC 2 Plan the procurement of the planned equipment/others on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.

PC 3 Able to find the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the bio-medical instrumentation in radiology department in accordance of planning.

PC 4 Prepare and collect necessary documentation for each step, each person and each stake holders involved in successful installation and operation of defined medical equipment and devices as per policies, regulations and specifications.

PC 5 Prepare a work-plan for the bio-medical instrumentation set-up, preventive maintenance, technical assistance and repair indicating the deliverables, timelines, requisites & involved personnel.

PC 6 Co-ordinate delivery, Installation and set-up of the defined medical equipment and devices

Maintain defined periodicity of calibration, repair and maintenance of the defined medical equipment and devices.

To be competent, the user/individual on the job must be able to:

PC 7 Apply the principles of operation of the defined medical equipment and devices during their inspection, performance evaluation, calibration, testing, etc.

PC 8 Provide post-installation technical assistance and instruction to the hospital staff on the installed medical equipment, operation and maintenance safely and correctly.

PC 9 Conduct scheduled calibration and periodic preventive maintenance

PC 10 Maintain inventory and supply chain of parts and supplies

PC 11 Diagnose, repair and provide on-call and on-site assistance for equipment malfunctions.

PC 12 Schedule and oversee third party repair and maintenance work

PC 13 Describe and follow safety procedures while working with the equipment and at the workplace

PC 14 Identify safety hazards in the workplace and apply knowledge of responsibilities for notification

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PC 15 Use appropriate personal protective clothing, equipment and personnel monitoring devices required while handling electricity, fire, radiations, radio-active materials and other possible exposures.
PC 16 Ensure maintenance documentation starts with Incoming Inspection, all corrective action and preventive maintenance notations, manufacturer and/or service support documents, and equipment final disposition
PC 17 Ensure management reports reflect all appropriate equipment histories.

Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.

To be competent, the user/individual on the job must be able to:

PC 18 Comply the regulations laid down by regulatory bodies for setting up and operationalization of defined medical equipment and devices.
PC 19 Ensure provision of all types of PPE (personal protective equipment) required while handling electricity, fire, radiation, radio-active materials and other possible exposures.
PC 20 Ensure proper risk assessment and control of PPE program in context of defined medical equipment and devices.
PC 21 Ensure proper documentation in accordance of special regulations of defined medical equipment and devices.
PC 22 Ensure action is annotated within Maintenance Management System according to departmental policy
PC 23 Keep abreast of the latest technology or new medical equipment/device under category of the defined medical equipment and devices as per latest guidelines.

4. Knowledge and Understanding (KU):

The individual on the job needs to know and understand:

KU 1 List the various types of defined medical equipment and devices required in the healthcare settings.
KU 2 Discuss the basic features, specifications, functioning, risk category and operation of the defined medical equipment and devices listed as per the latest guidelines.
KU 3 List all possible spare parts, tools, different types of resources, and regulatory requirements for successful installation and operation of the defined medical equipment and devices.
KU 4 Identify the circuits of the defined medical equipment and devices.
KU 5 Identify the electronic components in the defined medical equipment and devices.
KU 6 Identify different types of cables and connectors used in the defined medical equipment and devices.
KU 7 Identify the types of socket outlets, plugs and wiring of sockets and plugs in the defined medical equipment and devices.

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KU 8 Discuss steps of procurement of the defined medical equipment and devices on a qualitative, reasonable, timely and priority basis as per the consumer demand/specifications.

KU 9 Discuss ways of finding the best possible manufactures, vendors, suppliers, service providers and third-party interface for procurement and set up the defined medical equipment and devices.

KU 10 Discuss specific points to remember for calibration and maintenance checklist for the defined medical equipment and devices.

KU 11 Discuss necessary documentation required for each step, each person and each stakeholder involved in successful installation, calibration, preventive maintenance, technical assistance and repair of the defined medical equipment and devices as per policies, regulations and specifications.

KU 12 State the relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies for setting up and operationalization of the defined medical equipment and devices.

KU 13 Identify specific safety hazards, troubleshooting techniques and the corrective measures to be taken with respect to the defined medical equipment and devices.

KU 14 Discuss the escalation matrix to handle safety hazards with respect to the defined medical equipment and devices.

KU 15 Discuss the standard biological precautions to be taken during diagnosis, repair, calibration and final testing/ verification of the defined medical equipment and devices.

5. Generic Skills (GS):

User/individual on the job needs to know how to:

GS 1 Manage work efficiently in the professional practice of bio-medical instrumentation services

GS 2 Demonstrate communication skills while facilitating biomedical instrumentation services for medical equipment

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Annexure: Assessment Criteria

Detailed PC-wise assessment criteria and assessment marks for the NOS are as follows:

S. No.	Assessment Criteria for Performance Criteria	Theory Marks	Practical Marks	Project Marks	Viva Marks
1.	Perform installation and setting-up of the defined medical equipment and devices.	30	40	30	40

2.	Maintain defined periodicity of calibration, repair and maintenance of the defined equipment and devices.	30	40	30	40
3.	Carry out activities in compliance with all relevant laws, regulations, and codes for technology and technical safety laid down by regulatory bodies.	10	20	15	20
Total Marks		**70**	**100**	**75**	**100**

Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

<1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Check the Assessment location, date and time
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.

3. Assessment Quality Assurance levels/Framework:

- Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
- Questions are mapped to the specified assessment criteria
- Assessor must be ToA certified & trainer must be ToT Certified

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding

5. Method of verification or validation:

- Surprise visit to the assessment location

6. Method for assessment documentation, archiving, and access

- Hard/Soft copies of the documents are stored

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Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework

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.

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