

Qualification Pack



Industrial Automation Technician

QP Code: IAS/Q5601

Version: 4.0

NSQF Level: 4

Qualification Pack

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IAS/Q5601: Industrial Automation Technician

Brief Job Description

The Industrial Automation Technician is responsible for installation of control panels, integrating it with customers system and assisting the engineer in commissioning and powering up at customer site.

Personal Attributes

This job requires the individual to be organized, does logical thinking, and pays attention to details and has ability to work for long hours at customer sites in a team environment and under deadlines

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [IAS/N5605: Install and Commission Control](#)
2. [IAS/N9001: Work effectively with teams](#)
3. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)
4. [IAS/N0219: Adoption of Industry 4.0 Tool](#)

Qualification Pack (QP) Parameters

Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Installation and Commissioning
Country	India
NSQF Level	4
Credits	15
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL

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Minimum Educational Qualification & Experience	10th grade pass plus 2-year NTC (Instrumentation/Mechanical/EEE/ECE/Mechatronics) OR Completed 2nd year of 3-year diploma (after 10th) and pursuing regular diploma (Instrumentation/Mechanical/EEE/ECE/Mechatronics) OR 12th grade Pass (PCM) with 1 Year of experience Industrial Automation OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience Industrial Automation
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	07/10/2030
NSQF Approval Date	07/10/2025
Version	4.0
Reference code on NQR	QG-04-CG-045562025-V2-IASC
NQR Version	2.0

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IAS/N5605: Install and Commission Control

Description

This OS unit is about performing installation and integration of control panels at the project site with the customer system and providing assistance to the industrial automation engineer for commissioning of the system and powering up.

Scope

The scope covers the following :

- This OS unit is about performing installation and integration of control panels at the project site with the
- customer system and providing assistance to the industrial automation engineer for commissioning of the
- system and powering up.

Elements and Performance Criteria

Prepare for installation and integration of control panel

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

- PC1.** identify accurately the work requirements and delivery time schedule from authorized sources
- PC2.** carry out micro-level planning for installation and commissioning activities
- PC3.** clarify doubts by referring to design, drawing, job instructions and work manuals before going to the site
- PC4.** identify tools and tackles required at the site
- PC5.** ensure availability of control panel and tools required for installation at the site before visiting the site

Install control panel

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

- PC6.** ensure adequacy of working space, access and maintenance facilities at the site and ensure panel fixing is proper
- PC7.** inspect and determine any transit damage of goods and equipment
- PC8.** prepare transit damage report accurately in the presence of customer representative and proceed as per organization SOP
- PC9.** ensure required tools are available to carry out the installation
- PC10.** prepare a physical verification of the equipment and accessories that are available at site as per the check list
- PC11.** ensure that all the devices in the panel are dust free
- PC12.** check the internal panel wiring and ensure that it is in accordance with the design drawing
- PC13.** check insulation of internal panel wiring and devices within the panel
- PC14.** check if batteries and chargers have been assembled in accordance with manufactures recommended procedures

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- PC15.** verify the electrical conductors sizes and capacity for installation according to specifications
- PC16.** ensure that panel is positioned as prescribed, following safety norms
- PC17.** inspect the connection to socket outlets, switches and protective conductors
- PC18.** verify and / or perform settings of various components/sub-systems of the control panels supplied as per design and customer requirements
- PC19.** ensure that fuses, switches and other protective devices are labeled correctly
- PC20.** prepare ground and earth the panels
- PC21.** check for various voltage levels on charged panel, danger and warning notices, if necessary
- PC22.** follow company approved standard procedures in erection and commissioning process
- PC23.** use the wiring diagram to validate the accuracy of the installation to meet the specifications
- PC24.** ensure that applicable local electrical codes and standards are used
- PC25.** ensure that no installation damage has occurred, if there is damage to the panel while installing, prepare report and proceed as per organization SOP to rectify the damage

Test control panel

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

- PC26.** determine the process for testing the control panel and identify requirements for connections to the customer system, by referring to the organization SOP for panel testing and instruction therein
- PC27.** ensure cable ends, glands and terminators are properly processed
- PC28.** ensure end to end continuity of all the cables
- PC29.** ensure control panel is grounded properly
- PC30.** ensure continuity of all the fuses
- PC31.** test MCB functioning to ensure it is according to panel design
- PC32.** check the electrical load of the control panel and verify that it is within the specification
- PC33.** check control systems interlocks, record any faults and create rectification list
- PC34.** check each digital control point by comparing the command at the control panel and status of the devices that it controls
- PC35.** perform continuity check, insulation resistance, functions of all devices after completion of installation of all devices
- PC36.** check the functional testing information to be carried out in accompaniment with client and record and document the same
- PC37.** prepare work site test report and document for future use

Integrate control panel with customer system

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

- PC38.** interact with commissioning engineer in order to understand customer system integration requirements and work schedule
- PC39.** check the design/ drawing of the customer system to extract relevant information for integration
- PC40.** check the location of the customer system and plan for cable routing and related work, ensuring safety and efficiency
- PC41.** check with customers engineer or authorized person for planned integration work and ensure availability of the system

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- PC42.** check shutdown requirement for the integration work then coordinate with the customer representative and ensure availability
- PC43.** perform the required installation and or connection to the customer system , preferably in the presence of a customer representative
- PC44.** ensure that cable gland mounting , cable end terminations and labelling are properly done
- PC45.** check the cleanliness of customer system and ensure that the work area is free from any packing material or debris etc.
- PC46.** prepare a report of integration work performed in a format specified by the commissioning engineer
- PC47.** rectify any identified errors and retest to verify correct operation, if the fault persists, report to the engineer and seek guidance
- PC48.** check that the required tools are available to carry out the commissioning process
- PC49.** prepare the user acceptance test performance sheet in the format agreed upon by the engineer and customer
- PC50.** apply the control inputs from the panel or from the customer system and record resultant readings and control outputs in the specified observation sheet

Achieve productivity, quality and safety standards as per companys norms

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

- PC51.** achieve set productivity targets consistently
- PC52.** maintain record of damaged components as received, damaged during installation and damaged during testing
- PC53.** ensure compliance with health and safety guidelines and rules

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** hierarchy and reporting structure
- KU2.** organisation code of conduct
- KU3.** documentation policy of the organisation
- KU4.** quality and standards systems followed in the organisation
- KU5.** organisation business, locations, products, services and clients
- KU6.** organisation website, contact personnel and related details
- KU7.** organisation partners, their products and services
- KU8.** organisation sales and after-sales policies
- KU9.** engineering drawings, CAD drawings of mechanical, electro-mechanical, pneumatic and hydraulic systems
- KU10.** drawings of control panels, wiring diagrams, cable lay out, assembly instructions
- KU11.** control and instrumentation components and systems and use of related manuals
- KU12.** standard symbols, color codes, signs and warning signals
- KU13.** standards, practices and tools for wiring and assembly, including tags, ferrules cable glands, crimping
- KU14.** general principles of wiring and assembly, including cabling open and concealed

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- KU15.** uses and features of motors, generators, starters and their controls
- KU16.** safety norms in handling electrical/ electronic components and electrostatic discharge
- KU17.** customer safety requirements and other applicable safety standards
- KU18.** fundamentals of electricity and magnetism such as ohms law, difference between AC and DC, series and parallel connections.
- KU19.** use and importance of protective gear such as helmets, goggles, gloves, rubber shoes etc
- KU20.** selection and maintenance of various tools used during wiring , assembly, installation and testing
- KU21.** use of tools and instruments of the trade-hand tools, drill machine, grouting crimping, soldering, filing, megger, multimeter, tong tester, power meter, pneumatic tools, hydraulic tools, micrometer, vernier caliper, measuring tape etc
- KU22.** purpose, use and features of LAN, Fiber optic, Wi-Fi connections and cables frequency occurring errors, causes, troubleshooting
- KU23.** bill of materials/bill of quantities, project plan schedule
- KU24.** use of appropriate formats, check lists and documentation
- KU25.** email, internet, computer operation, MS word, excel, data, backup, printing

Generic Skills (GS)

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

- GS1.** compose e-mails, letters and other official documents
- GS2.** write schedules and timelines
- GS3.** write test reports
- GS4.** read drawings, job sheets and work orders
- GS5.** read user requirements accurately
- GS6.** read technical specifications, drawings, manuals, instructions accurately
- GS7.** read standards and regulatory compliance documents accurately
- GS8.** read schedules and timelines accurately
- GS9.** discuss task lists, schedules, and work items with co-workers
- GS10.** inform progress made to customers, vendors and partners on an ongoing basis
- GS11.** communicate with customers without using jargon, slang or acronyms
- GS12.** report issues and problems to the engineer in clear terms
- GS13.** make logical decisions pertaining to the concerned area of work, resolving conflicting demands that arise with respect to customer and company, take logical decision and inform the engineer
- GS14.** plan the execution of the work and activities so that it can be finished on time and meet targets
- GS15.** make alternative plans and work-arounds in the interest of the project while meeting quality and safety needs, when faced with challenges
- GS16.** support customers when they need help
- GS17.** take actions that contribute to customer delight and create positive impression of the organization

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- GS18.** take steps to handle customer situations effectively to manage customer relationships positively
- GS19.** identify linkages between building positive customer relationship and rapport, and business growth
- GS20.** think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s)
- GS21.** identify immediate or temporary solutions to resolve delays
- GS22.** analyze errors to avoid repetition in future
- GS23.** improve work process and share experience
- GS24.** use the existing information to optimize solutions
- GS25.** analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, and showcase how to use it as a guide to thought and action in various work contexts

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for installation and integration of control panel</i>	5	15	-	-
PC1. identify accurately the work requirements and delivery time schedule from authorized sources	1	3	-	-
PC2. carry out micro-level planning for installation and commissioning activities	1	3	-	-
PC3. clarify doubts by referring to design, drawing, job instructions and work manuals before going to the site	1	3	-	-
PC4. identify tools and tackles required at the site	1	3	-	-
PC5. ensure availability of control panel and tools required for installation at the site before visiting the site	1	3	-	-
<i>Install control panel</i>	25	55	-	-
PC6. ensure adequacy of working space, access and maintenance facilities at the site and ensure panel fixing is proper	1	3	-	-
PC7. inspect and determine any transit damage of goods and equipment	1	3	-	-
PC8. prepare transit damage report accurately in the presence of customer representative and proceed as per organization SOP	1	3	-	-
PC9. ensure required tools are available to carry out the installation	1	3	-	-
PC10. prepare a physical verification of the equipment and accessories that are available at site as per the check list	1	3	-	-
PC11. ensure that all the devices in the panel are dust free	1	3	-	-
PC12. check the internal panel wiring and ensure that it is in accordance with the design drawing	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. check insulation of internal panel wiring and devices within the panel	1	3	-	-
PC14. check if batteries and chargers have been assembled in accordance with manufactures recommended procedures	1	3	-	-
PC15. verify the electrical conductors sizes and capacity for installation according to specifications	1	3	-	-
PC16. ensure that panel is positioned as prescribed, following safety norms	1	3	-	-
PC17. inspect the connection to socket outlets, switches and protective conductors	1	3	-	-
PC18. verify and / or perform settings of various components/sub-systems of the control panels supplied as per design and customer requirements	1	3	-	-
PC19. ensure that fuses, switches and other protective devices are labeled correctly	1	3	-	-
PC20. prepare ground and earth the panels	1	3	-	-
PC21. check for various voltage levels on charged panel, danger and warning notices, if necessary	2	2	-	-
PC22. follow company approved standard procedures in erection and commissioning process	2	2	-	-
PC23. use the wiring diagram to validate the accuracy of the installation to meet the specifications	2	2	-	-
PC24. ensure that applicable local electrical codes and standards are used	2	2	-	-
PC25. ensure that no installation damage has occurred, if there is damage to the panel while installing, prepare report and proceed as per organization SOP to rectify the damage	2	2	-	-
<i>Test control panel</i>	24	24	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC26. determine the process for testing the control panel and identify requirements for connections to the customer system, by referring to the organization SOP for panel testing and instruction therein	2	2	-	-
PC27. ensure cable ends, glands and terminators are properly processed	2	2	-	-
PC28. ensure end to end continuity of all the cables	2	2	-	-
PC29. ensure control panel is grounded properly	2	2	-	-
PC30. ensure continuity of all the fuses	2	2	-	-
PC31. test MCB functioning to ensure it is according to panel design	2	2	-	-
PC32. check the electrical load of the control panel and verify that it is within the specification	2	2	-	-
PC33. check control systems interlocks, record any faults and create rectification list	2	2	-	-
PC34. check each digital control point by comparing the command at the control panel and status of the devices that it controls	2	2	-	-
PC35. perform continuity check, insulation resistance, functions of all devices after completion of installation of all devices	2	2	-	-
PC36. check the functional testing information to be carried out in accompaniment with client and record and document the same	2	2	-	-
PC37. prepare work site test report and document for future use	2	2	-	-
<i>Integrate control panel with customer system</i>	23	20	-	-
PC38. interact with commissioning engineer in order to understand customer system integration requirements and work schedule	2	2	-	-
PC39. check the design/ drawing of the customer system to extract relevant information for integration	2	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC40. check the location of the customer system and plan for cable routing and related work, ensuring safety and efficiency	2	2	-	-
PC41. check with customers engineer or authorized person for planned integration work and ensure availability of the system	2	2	-	-
PC42. check shutdown requirement for the integration work then coordinate with the customer representative and ensure availability	2	1	-	-
PC43. perform the required installation and or connection to the customer system , preferably in the presence of a customer representative	2	1	-	-
PC44. ensure that cable gland mounting , cable end terminations and labelling are properly done	2	1	-	-
PC45. check the cleanliness of customer system and ensure that the work area is free from any packing material or debris etc.	2	1	-	-
PC46. prepare a report of integration work performed in a format specified by the commissioning engineer	2	1	-	-
PC47. rectify any identified errors and retest to verify correct operation, if the fault persists, report to the engineer and seek guidance	2	1	-	-
PC48. check that the required tools are available to carry out the commissioning process	1	2	-	-
PC49. prepare the user acceptance test performance sheet in the format agreed upon by the engineer and customer	1	2	-	-
PC50. apply the control inputs from the panel or from the customer system and record resultant readings and control outputs in the specified observation sheet	1	2	-	-
<i>Achieve productivity, quality and safety standards as per companys norms</i>	3	6	-	-
PC51. achieve set productivity targets consistently	1	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC52. maintain record of damaged components as received, damaged during installation and damaged during testing	1	2	-	-
PC53. ensure compliance with health and safety guidelines and rules	1	2	-	-
NOS Total	80	120	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	IAS/N5605
NOS Name	Install and Commission Control
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Installation and Commissioning
NSQF Level	4
Credits	5
Version	2.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

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IAS/N9001: Work effectively with teams

Description

This NOS unit is about building relationships and working with people and groups inside and outside the organization, using skills and habits, to achieve the team goals and objectives.

Scope

The scope covers the following :

- Work as per organisational team environment
- Communicate effectively
- Co-operate with team members and superiors
- Respect customs / preferences and gender / ability differences "

Elements and Performance Criteria

Work as per the organisational team environment

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

- PC1.** identify team objectives and goals, team members by name, their role and responsibilities, greet them appropriately and respond to their greetings
- PC2.** comply with organisation's policies and procedures for working with team members within and outside the organisation—especially related to privacy, confidentiality and security
- PC3.** work as per the environment to build trust and mutual respect
- PC4.** participate in decision making by providing facts and figures, give / accept constructive suggestions, take initiatives to help team members arrive at workable decisions and meet the goals
- PC5.** accept decisions professionally and support even if they do not match suggestions and personal views

Communicate effectively

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

- PC6.** communicate professionally as per organisation's protocols, using appropriate mode of communication—verbal, written, mail, phone or text—and clearly articulate the message to ensure that the receiver understands the message
- PC7.** listen to team members attentively, respond promptly, seek / provide clarifications if required
- PC8.** share important information with the team timely and refrain from overloading them with unnecessary and unsolicited information

Co-operate with team members and superiors

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

- PC9.** perform own role, receive inputs from others and make adjustments within permissible rules as per requirement, to produce output in time for other team members to follow

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- PC10.** help team members to perform their role effectively and provide any clarifications/support they need, including tools /equipment / common resources as well as resolve any contentious issues amicably, involving the team lead or the supervisor if needed
- PC11.** let team members know in good time if commitments cannot be carried out, explaining the reasons, and provide alternate solutions, if any; let the team lead know about this
- PC12.** act in the interest of the team and the organisation, take initiative to correct the wrong, seek help or escalate if needed to ensure that things do not 'fall through the gap' and team goals are achieved

Respect customs / preferences and gender / ability differences

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

- PC13.** follow organisation's policies and statutory guidelines w.r.t seeking information about others' customs / preferences, making references or comments on social customs / preferences, and refrain from hurting sentiments
- PC14.** accommodate team members' preferences to the extent feasible, and in case they come in the way of fulfilling team goals, discuss with the supervisor/ team leader
- PC15.** ensure personal behaviour, conduct and communication styles, taking gender and disability of the person into consideration
- PC16.** list the different types of disabilities with their respective issues and ways to help them overcome challenges
- PC17.** use inclusive language, verbal as well as non-verbal, irrespective of the disability and the gender of the person
- PC18.** ensure equal treatment for all clients, colleagues and co-workers while respecting their personal space

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Organisation's policies on dress code , workplace behaviour , performance management,incentives,delivery standards,information security,etc.
- KU2.** Organisation's hierarchy and escalation matrix
- KU3.** importance of the individual's role in the workflow
- KU4.** work area inspection procedures and practices
- KU5.** different types of information that colleagues might need and the importance of providing this information when it is required
- KU6.** deeper understanding of actions and consequences of gender based behaviour
- KU7.** knowledge of gender based concepts, issues and legislation
- KU8.** organisation standards and guidelines to be followed for PwD and knowledge about laws, acts and provisions defined for PwD by the statutory bodies and the right way to use them including various medical conditions associated with PwD
- KU9.** health and safety requirements at workplace for PwD and information about various institutes working for PwD to enable in providing livelihood opportunities for PwD
- KU10.** rights and duties at workplace with respect to PwD and various government / private schemes and benefits available for PwD

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KU11. process of recruiting people for a particular job profile w.r.t PwD and gender including rights and duties at workplace with respect to gender sensitivity

Generic Skills (GS)

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

- GS1.** complete forms such as work orders, invoices and maintenance records
- GS2.** fill up appropriate forms, activity logs and attendance sheets as per the organisation's format in English and/or local language
- GS3.** write basic accident or incident report as witnessed in an appropriate format to the relevant authority
- GS4.** read warnings, instructions and other text material on product labels, components, etc.
- GS5.** read relevant signage, warnings, labels or descriptions on equipment, etc. while carrying out work activities
- GS6.** listen effectively and orally communicate information
- GS7.** ask for clarification and advice from the concerned person
- GS8.** make decisions on a suitable course of action or response keeping in view resource utilisation while meeting
- GS9.** plan and organise work to achieve targets and deadlines
- GS10.** understand needs of the customer, suggest most appropriate solution and support them whenever needed
- GS11.** match symptoms of the fault noticed to the cause of the problem
- GS12.** anticipate and avoid hazards that may occur during repairs because of tools, materials used or repair processes
- GS13.** spot process disruptions and delays
- GS14.** practice and acceptance of gender and its concepts
- GS15.** develop empathy across genders and towards PwD
- GS16.** reflect on own gender identity, gender roles and PwD issues
- GS17.** engage and participate in discussions to end gender and disability discrimination
- GS18.** improve and modify work practices
- GS19.** maintain positive and effective relationships with colleagues and customers

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Work as per the organisational team environment</i>	15	8	-	5
PC1. identify team objectives and goals, team members by name, their role and responsibilities, greet them appropriately and respond to their greetings	4	4	-	-
PC2. comply with organisation's policies and procedures for working with team members within and outside the organisation—especially related to privacy, confidentiality and security	4	-	-	2
PC3. work as per the environment to build trust and mutual respect	2	-	-	1
PC4. participate in decision making by providing facts and figures, give / accept constructive suggestions, take initiatives to help team members arrive at workable decisions and meet the goals	4	4	-	1
PC5. accept decisions professionally and support even if they do not match suggestions and personal views	1	-	-	1
<i>Communicate effectively</i>	6	10	-	1
PC6. communicate professionally as per organisation's protocols, using appropriate mode of communication—verbal, written, mail, phone or text—and clearly articulate the message to ensure that the receiver understands the message	2	6	-	1
PC7. listen to team members attentively, respond promptly, seek / provide clarifications if required	2	-	-	-
PC8. share important information with the team timely and refrain from overloading them with unnecessary and unsolicited information	2	4	-	-
<i>Co-operate with team members and superiors</i>	8	18	-	1
PC9. perform own role, receive inputs from others and make adjustments within permissible rules as per requirement, to produce output in time for other team members to follow	2	6	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. help team members to perform their role effectively and provide any clarifications/support they need, including tools /equipment / common resources as well as resolve any contentious issues amicably, involving the team lead or the supervisor if needed	-	6	-	1
PC11. let team members know in good time if commitments cannot be carried out, explaining the reasons, and provide alternate solutions, if any; let the team lead know about this	2	-	-	-
PC12. act in the interest of the team and the organisation, take initiative to correct the wrong, seek help or escalate if needed to ensure that things do not 'fall through the gap' and team goals are achieved	4	6	-	-
<i>Respect customs / preferences and gender / ability differences</i>	11	14	-	3
PC13. follow organisation's policies and statutory guidelines w.r.t seeking information about others' customs / preferences, making references or comments on social customs / preferences, and refrain from hurting sentiments	2	4	-	-
PC14. accommodate team members' preferences to the extent feasible, and in case they come in the way of fulfilling team goals, discuss with the supervisor/ team leader	2	-	-	1
PC15. ensure personal behaviour, conduct and communication styles, taking gender and disability of the person into consideration	2	6	-	1
PC16. list the different types of disabilities with their respective issues and ways to help them overcome challenges	1	-	-	1
PC17. use inclusive language, verbal as well as non-verbal, irrespective of the disability and the gender of the person	2	4	-	-
PC18. ensure equal treatment for all clients, colleagues and co-workers while respecting their personal space	2	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	40	50	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	IAS/N9001
NOS Name	Work effectively with teams
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Occupation	Generic
NSQF Level	4
Credits	1
Version	4.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

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DGT/VSQ/N0102: Employability Skills (60 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Career Development & Goal Setting
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

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

- PC1.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

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

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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

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- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e- mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.

Qualification Pack

PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings

Qualification Pack

- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

Qualification Pack

IAS/N0219: Adoption of Industry 4.0 Tool

Description

The os is responsible for Using Industry 4.0 Tool for Enhance Productivity .

Scope

The scope covers the following :

- The os is responsible for Using Industry 4.0 Tool for Enhance Productivity .

Elements and Performance Criteria

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

- PC1.** Demonstrate operation, components of an industrial automation system (PLC), and wired and wireless devices in the laboratory.
- PC2.** Demonstrate the working and wiring of earthing pits, UPS, Batteries, and Power distribution components of an industrial automation system (PLC) in a laboratory
- PC3.** Explain PLC systems' operation, programming, and I/O interface with field sensors and actuators
- PC4.** Verify and rectify sensor and actuator signal communication faults in the PLC system
- PC5.** Overhauling and maintenance of solenoid valves and cylinders, along with air pressure regulators and filters
- PC6.** Testing and calibration of compressor pressure switches, Gauges, and Valves
- PC7.** Testing and calibration of industrial switches, such as pressure, temperature, and level switches.
- PC8.** Test and rectify faults in the Proximity Sensors' operation, installation, and wiring

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** Company code of conduct
- KU2.** Organization culture
- KU3.** Company line of business and product offerings
- KU4.** Company production policy
- KU5.** Departments involved with production

Generic Skills (GS)

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

- GS1.** Compose e-mails, letters and other official documents clearly
- GS2.** Write technical specifications

Qualification Pack

- GS3.** Write technical documentation
- GS4.** Read standards and regulatory compliance document
- GS5.** Question system integrators/licensors appropriately in order to understand the application and the requirement

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	40	40	10	10
PC1. Demonstrate operation, components of an industrial automation system (PLC), and wired and wireless devices in the laboratory.	4	8	2	2
PC2. Demonstrate the working and wiring of earthing pits, UPS, Batteries, and Power distribution components of an industrial automation system (PLC) in a laboratory	8	4	2	2
PC3. Explain PLC systems' operation, programming, and I/O interface with field sensors and actuators	4	8	2	2
PC4. Verify and rectify sensor and actuator signal communication faults in the PLC system	8	4	2	2
PC5. Overhauling and maintenance of solenoid valves and cylinders, along with air pressure regulators and filters	4	8	2	2
PC6. Testing and calibration of compressor pressure switches, Gauges, and Valves	8	4	-	-
PC7. Testing and calibration of industrial switches, such as pressure, temperature, and level switches.	2	2	-	-
PC8. Test and rectify faults in the Proximity Sensors' operation, installation, and wiring	2	2	-	-
NOS Total	40	40	10	10

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N0219
NOS Name	Adoption of Industry 4.0 Tool
Sector	Instrumentation
Sub-Sector	
Occupation	Installation and Commissioning
NSQF Level	4.0
Credits	2
Version	1.0
Last Reviewed Date	07/10/2025
Next Review Date	07/10/2030
NSQC Clearance Date	07/10/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down a proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on the knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criterion.

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6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
IAS/N5605.Install and Commission Control	80	120	-	-	200	50
IAS/N9001.Work effectively with teams	40	50	-	10	100	20
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	0	0	50	20
IAS/N0219.Adoption of Industry 4.0 Tool	40	40	10	10	100	10
Total	180	240	10	20	450	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Qualification Pack

Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.

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Knowledge and Understanding (KU)	Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills/ Generic Skills (GS)	Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.