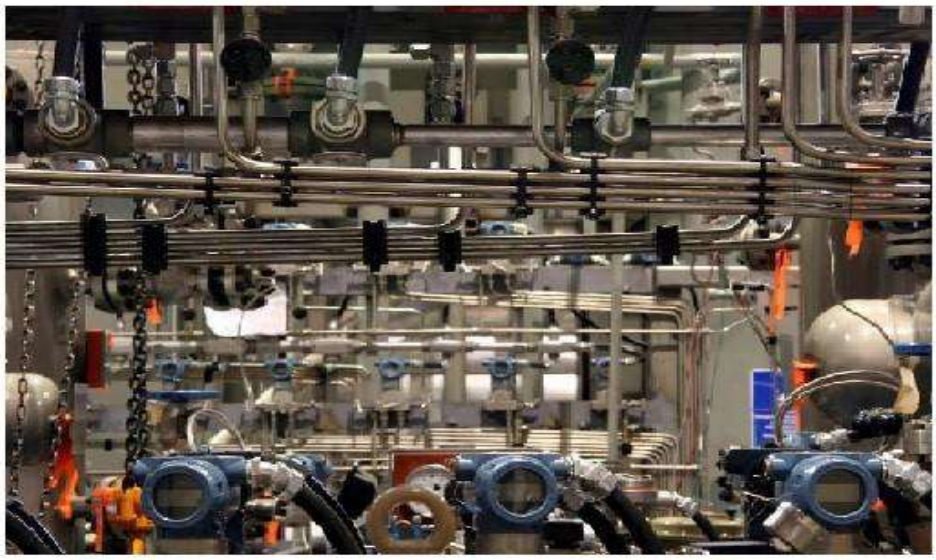

Industrial Automation Technician

QP Code: IAS/Q5601

NSQF Level: 4

Instrumentation, Automation, Surveillance & Communication Sector Skill Council || IASC SSC, 201-202, STBP NSIC Complex, Okhla Industrial Estate, New Delhi 110020

Contents

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 Panel
2. IAS/N9001: Work effectively with teams
3. IAS/N9002: Health and safety in workplace

Qualification Pack (QP) Parameters

Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Primary Occupation	Installation & Commissioning
Secondary Occupation	
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/NIL
Minimum Educational Qualification & Experience	I.T.I (Electrical, Electronics, Instrumentation) OR Diploma (Electrical, Electronics, Instrumentation)
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NA

Minimum Job Entry Age	18 Years

Last Reviewed On	02/05/2019
Next Review Date	01/05/2023
NSQC Approval Date	22/08/2019
Version	1.0

IAS/N5605: Install and Commission Control Panel

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

This unit/ task covers the following: Prepare for installation and integration of control panel Install control panel Test control panel Integrate control panel with customer system Achieve productivity, quality and safety standards as per company's norms

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

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

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 ecord 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 cablingopen and concealed

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

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

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Prepare for installation and integration of control panel	**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	-	-
Install control panel	**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	-	-
PC13. check insulation of internal panel wiring and devices within the panel	1	3	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-
Test control panel	**24**	**24**	**-**	**-**

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	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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	-	-
Integrate control panel with customer system	**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	-	-
PC40. check the location of the customer system and plan for cable routing and related work, ensuring safety and efficiency	2	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
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 ecord resultant readings and control outputs in the specified observation sheet	1	2	-	-

Achieve productivity, quality and safety standards as per companys norms	**3**	**6**	-	-
PC51. achieve set productivity targets consistently	1	2	-	-
PC52. maintain record of damaged components as received, damaged during installation and damaged during testing	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC53. ensure compliance with health and safety guidelines and rules	1	2	-	-
NOS Total	**80**	**120**	-	-

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N5605
NOS Name	Install and Commission Control Panel
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Primary Occupation	Installation & Commissioning
Secondary Occupation	
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	02/05/2019
Next Review Date	01/05/2023
NSQC Clearance Date	22/08/2019

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

This unit/task covers the following: Creating team environment Communicating giving and receiving Working cooperatively Participating in team decision making Demonstrating Sense of Responsibility Showing respect for opinions, customs and preferences

Elements and Performance Criteria

Create Team Environment

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

PC1. know and understand the team objectives and goals

PC2. know team members by name. Greet them appropriately and respond to their greetings.

PC3. know the roles and responsibilities of team members. Ensure others know about you and your role in the team

PC4. learn about the culture and preferences of team members especially if they belong to other organizations or nationalities

PC5. follow organizations policies and procedures for working with team members within and outside the organization especially relating to privacy, confidentiality and security.

PC6. create an environment of trust and mutual respect

Communicate Give and Receive

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

PC7. use appropriate mode of communication verbal, written, mail, phone or text and clearly articulate your message to ensure that the recipient understands the message

PC8. listen to team members and try to understand what they are wanting to say. Seek or provide clarifications if you see any gap in understanding

PC9. communicate professionally and follow organization protocols. Do not overload the team members with unnecessary and unsolicited information **PC10.** share important information with the team timely.

PC11. respond to communications promptly.

Work Cooperatively

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

PC12. perform own role and produce output in time for other team members to consume

PC13. receive inputs from others and work upon it per role requirement

PC14. make adjustments within the permissible rules so that work flows smoothly

PC15. help team members to perform their role effectively and provide any clarifications and support they need

PC16. share tools and common resources fairly, taking cognizance of others needs and schedules **PC17.** resolve any contentious issues amicably, involving the team lead or the supervisor if needed

PC18. let team members know in good time if you cannot carry out your commitments, explaining the reasons and alternate solutions, if any. Let the team lead know about this.

Participate in Team Decision making

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

PC19. think positively and make constructive suggestions to meet the goals

PC20. accept and give suggestions with open mind

PC21. take initiatives and volunteer to contribute

PC22. help team members with facts and figures to arrive at workable decisions

PC23. accept decisions professionally and support these, even if these do not match your suggestions and personal views

Demonstrate Sense of Responsibility

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

PC24. act in the interest of the team and the organization to ensure that things do not fall through the gap and team goals are achieved.

PC25. take initiative to correct the situation if something seems to be going wrong

PC26. seek help or escalate if the situation demands

Show Respect for Opinions, Customs and Preferences

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

PC27. follow organizations and statutory guidelines about making references or comments to social customs or preferences

PC28. refrain from making any comments to hurt sentiments

PC29. accommodate team members preferences to the extent feasible. If these come in the way of fulfilling team goals, discuss with the supervisor/ team leader

PC30. seek information and clarifications from others if you do not understand any customs

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. the organizations policies and procedures for working with colleagues, roles and responsibilities in relation to this

KU2. the importance of effective communication and establishing good working relationships with colleagues

KU3. different methods of communication and the circumstances in which it is appropriate to use these

KU4. the importance of creating an environment of trust and mutual respect

KU5. the implications of own work on the work and schedule of others

KU6. different types of information that colleagues might need and the importance of providing this information when it is required

KU7. the importance of helping colleagues with problems, in order to meet quality and time standards as a team

Generic Skills (GS)

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

GS1. complete written work with attention to detail

GS2. read instructions, guidelines/procedures

GS3. listen effectively and orally communicate information

GS4. ask for clarification and advice from the concerned person

GS5. make decisions on a suitable course of action or response keeping in view resource utilization while meeting commitments

GS6. plan and organize work to achieve targets and deadlines

GS7. understand real needs of the customer and suggest most appropriate solution

GS8. support customer when they need help

GS9. apply problem solving approaches in different situations

GS10. use the existing information to arrive at actionable decision points

GS11. use the existing information for improving the customer satisfaction

GS12. use the existing information to optimize solution and company business

GS13. analyze problems and identify causes and possible solutions

GS14. apply balanced judgments to different situations

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Create Team Environment	**6**	**11**	-	-
PC1. know and understand the team objectives and goals	1	2	-	-
PC2. know team members by name. Greet them appropriately and respond to their greetings.	1	1	-	-
PC3. know the roles and responsibilities of team members. Ensure others know about you and your role in the team	1	1	-	-
PC4. learn about the culture and preferences of team members especially if they belong to other organizations or nationalities	1	4	-	-
PC5. follow organizations policies and procedures for working with team members within and outside the organization especially relating to privacy, confidentiality and security.	1	1	-	-
PC6. create an environment of trust and mutual respect	1	2	-	-
Communicate Give and Receive	**5**	**10**	-	-
PC7. use appropriate mode of communication verbal, written, mail, phone or text and clearly articulate your message to ensure that the recipient understands the message	1	1	-	-
PC8. listen to team members and try to understand what they are wanting to say. Seek or provide clarifications if you see any gap in understanding	1	2	-	-
PC9. communicate professionally and follow organization protocols. Do not overload the team members with unnecessary and unsolicited information	1	3	-	-
PC10. share important information with the team timely.	1	2	-	-
PC11. respond to communications promptly.	1	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Work Cooperatively	**7**	**8**	-	-
PC12. perform own role and produce output in time for other team members to consume	1	2	-	-
PC13. receive inputs from others and work upon it per role requirement	1	1	-	-
PC14. make adjustments within the permissible rules so that work flows smoothly	1	1	-	-
PC15. help team members to perform their role effectively and provide any clarifications and support they need	1	1	-	-
PC16. share tools and common resources fairly, taking cognizance of others needs and schedules	1	1	-	-
PC17. resolve any contentious issues amicably, involving the team lead or the supervisor if needed	1	1	-	-
PC18. let team members know in good time if you cannot carry out your commitments, explaining the reasons and alternate solutions, if any. Let the team lead know about this.	1	1	-	-
Participate in Team Decision making	**5**	**7**	-	-
PC19. think positively and make constructive suggestions to meet the goals	1	1	-	-
PC20. accept and give suggestions with open mind	1	1	-	-
PC21. take initiatives and volunteer to contribute	1	1	-	-
PC22. help team members with facts and figures to arrive at workable decisions	1	1	-	-
PC23. accept decisions professionally and support these, even if these do not match your suggestions and personal views	1	3	-	-
Demonstrate Sense of Responsibility	**3**	**5**	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC24. act in the interest of the team and the organization to ensure that things do not fall through the gap and team goals are achieved.	1	3	-	-
PC25. take initiative to correct the situation if something seems to be going wrong	1	1	-	-
PC26. seek help or escalate if the situation demands	1	1	-	-
Show Respect for Opinions, Customs and Preferences	**4**	**4**	-	-
PC27. follow organizations and statutory guidelines about making references or comments to social customs or preferences	1	1	-	-
PC28. refrain from making any comments to hurt sentiments	1	1	-	-
PC29. accommodate team members preferences to the extent feasible. If these come in the way of fulfilling team goals, discuss with the supervisor/ team leader	1	1	-	-
PC30. seek information and clarifications from others if you do not understand any customs	1	1	-	-
NOS Total	**30**	**45**	-	-

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N9001
NOS Name	Work effectively with teams
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Primary Occupation	Generic
Secondary Occupation	
NSQF Level	4
Credits	TBD

Version	1.0
Last Reviewed Date	02/05/2019
Next Review Date	01/05/2023
NSQC Clearance Date	22/08/2019

IAS/N9002: Health and safety in workplace

Description

This OS unit is about following adequate safety procedures to make work environment safe

Scope

This unit/ task cover the following: Follow standard safety procedures of the company Maintain good health and posture

Elements and Performance Criteria

Follow standard safety procedures of the company and safety

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

PC1. comply with general safety procedures followed in the company

PC2. Follow standard safety procedures while handling an equipment, hazardous material or tool

PC3. remove finger rings or any other metal objects which may interfere with the work before working on the unit

PC4. use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc

PC5. escalate about any hazardous materials or things found in the premises

PC6. report about any breach of safety procedure in the company

PC7. ensure zero accidents at work

PC8. avoid damage of components due to negligence in ESD procedures

PC9. participate regularly in fire drills or other safety related workshops organized by the company

PC10. ensure no loss for company due to safety negligence

Maintain good health and posture

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

PC11. maintain appropriate posture, especially in long hours of sitting or standing position and in handling heavy materials

PC12. participate in company organized health sessions such as yoga, physiotherapy or games

PC13. handle heavy and hazardous materials with care and using appropriate tools and handling equipment such as trolleys, jacks and ladders

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. companys policies on: incentives, delivery standards, and personnel management
KU2. company occupational safety and health policy followed
KU3. company emergency evacuation procedure
KU4. companys medical policy
KU5. how to maintain the work area safe and secure
KU6. how to handle hazardous materials, tools and equipment
KU7. emergency procedures to be followed such as fire accidents, electrocution etc.
KU8. long term value of good posture and use of appropriate handling equipment
KU9. safety regulations and standards and how to apply these **KU10.**
electrical grounding practices

Generic Skills (GS)

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

GS1. compose e mails, letters, memos, reminders, and other documents clearly
GS2. share knowledge, issues, problems and resolutions relating to safety and health
GS3. read mails, messages, alerts
GS4. read pictures, drawings, notes relating to safety and health
GS5. question co-workers in order to understand the safety and health issues
GS6. inform co-workers about safety and health issues
GS7. report issues and problems relating to safety and health to managers in clear terms
GS8. make decisions pertaining to safety and health issues at workplace
GS9. make decisions about escalating safety and health issues at workplace to managers
GS10. plan and organize work conforming to the safety and health norms of the company
GS11. understand real needs of the customer and suggest most appropriate solution
GS12. support customers when they need help
GS13. discuss problems relating to the safety and health, evaluate the possible solution(s) and arrive at optimum /best possible solution(s)in consultation with concerned people
GS14. use the existing information to arrive at actionable decision points
GS15. use the existing information for improving the customer satisfaction
GS16. use the existing information to optimize solution and company business
GS17. analyze problems and identify causes and possible solutions
GS18. apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action
GS19. anticipate problems, risks and opportunities and utilize these for mitigation and business optimization

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Follow standard safety procedures of the company and safety	**14**	**24**	-	-
PC1. comply with general safety procedures followed in the company	2	1	-	-
PC2. Follow standard safety procedures while handling an equipment, hazardous material or tool	1	1	-	-
PC3. remove finger rings or any other metal objects which may interfere with the work before working on the unit	2	2	-	-
PC4. use safety materials such as goggles, gloves, ear plugs, caps, ESD pins, covers, shoes, etc	1	3	-	-
PC5. escalate about any hazardous materials or things found in the premises	1	3	-	-
PC6. report about any breach of safety procedure in the company	1	2	-	-
PC7. ensure zero accidents at work	2	3	-	-
PC8. avoid damage of components due to negligence in ESD procedures	1	3	-	-
PC9. participate regularly in fire drills or other safety related workshops organized by the company	2	3	-	-
PC10. ensure no loss for company due to safety negligence	1	3	-	-
Maintain good health and posture	**6**	**6**	-	-
PC11. maintain appropriate posture, especially in long hours of sitting or standing position and in handling heavy materials	2	2	-	-
PC12. participate in company organized health sessions such as yoga, physiotherapy or games	2	2	-	-

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. handle heavy and hazardous materials with care and using appropriate tools and handling equipment such as trolleys, jacks and ladders	2	2	-	-
NOS Total	**20**	**30**	**-**	**-**

National Occupational Standards (NOS) Parameters

NOS Code	IAS/N9002
NOS Name	Health and safety in workplace
Sector	Instrumentation
Sub-Sector	Instrumentation & Automation
Primary Occupation	Generic
Secondary Occupation	
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	02/05/2019
Next Review Date	01/05/2023
NSQC Clearance Date	22/08/2019

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. EachPerformance Criteria (PC) (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by theSSC.
3. Individual assessment agencies will create unique question papers for theory part for eachcandidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every studentat each examination/ training center based on these criteria.
5. In case of successfully passing only certain number of NOSs, the trainee is eligible to takesubsequent assessment on the balance NOS's to pass the Qualification Pack.
6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack

Recommended Pass % : 70

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
IAS/N5605.Install and Commission Control Panel	80	120	-	-	200	62
IAS/N9001.Work effectively with teams	30	45	-	-	75	23
IAS/N9002.Health and safety in workplace	20	30	-	-	50	15
Total	**130**	**195**	**-**	**-**	**325**	**100**