



IT - ITes SSC  
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## Qualification Pack



# Test Engineer

QP Code: SSC/Q7001

Version: 2.0

NSQF Level: 4

IT-ITes Sector Skill Council || NASSCOM Plot No - 7, 8, 9 & 10, 3rd Floor, Sector 126  
Noida Uttar Pradesh - 201303

## Qualification Pack

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## Qualification Pack

### SSC/Q7001: Test Engineer

#### Brief Job Description

Individuals in this job are responsible for development and coordination of scheduled and unscheduled test plans and conducting software compatibility tests with programs, hardware, operating systems, or network environments. The job involves documenting, reporting and tracking software defects using manual testing software.

#### Personal Attributes

This job requires the individual to work independently and be comfortable in making decisions pertaining to his/her area of work. The individual should be result oriented and demonstrate significant attention to detail. The individual should also be able to demonstrate logical thinking and interpersonal skills.

#### Applicable National Occupational Standards (NOS)

##### Compulsory NOS:

1. [SSC/N1301: Design tests for software products/applications/modules](#)
2. [SSC/N1302: Carry out automated tests on software products/applications/modules](#)
3. [SSC/N1303: Carry out manual tests on software products/applications/modules](#)
4. [SSC/N9001: Manage your work to meet requirements](#)
5. [SSC/N9002: Work effectively with colleagues](#)
6. [SSC/N9003: Maintain a healthy, safe and secure working environment](#)
7. [SSC/N9004: Provide data/information in standard formats](#)
8. [SSC/N9014: Maintain an inclusive, environmentally sustainable workplace](#)

#### Qualification Pack (QP) Parameters

<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	Software Product Development
<b>Occupation</b>	Quality Assurance and Engineering
<b>Country</b>	India



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<b>NSQF Level</b>	4
<b>Credits</b>	NA
<b>Aligned to NCO/ISCO/ISIC Code</b>	NCO-2015/ 2519.0402
<b>Minimum Educational Qualification &amp; Experience</b>	Graduate (Computer Science or any related field) with 1 Year of experience TQM, ISO etc. quality process, software testing techniques, test writing plans OR 12th Class (Science) with 4 Years of experience
<b>Minimum Level of Education for Training in School</b>	12th Class
<b>Pre-Requisite License or Training</b>	Software Development Certifications in C++, Embedded, C#, C, Java etc.
<b>Minimum Job Entry Age</b>	18 Years
<b>Last Reviewed On</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQF Approval Date</b>	27/01/2022
<b>Version</b>	2.0
<b>Reference code on NQR</b>	2022/ITES/ITSSC/05258
<b>NQR Version</b>	1.0

## Qualification Pack

### SSC/N1301: Design tests for software products/applications/modules

#### Description

This unit is about designing and developing manual cases and automated scripts to test and verify the functionality, usability, compatibility, security and/or performance of embedded software products/ applications/ modules.

#### Scope

The scope covers the following :

- Conduct testing like functional usability, compatibility, security, performance regression, etc.
- Interact with appropriate people like colleagues at the IT helpdesk, members of technical team, internal and external subject matter experts, line manager, etc.

#### Elements and Performance Criteria

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

- PC1.** identify any issues with the requirements for testing and clarify these with supervisors
- PC2.** access reusable scenarios, test cases, scripts and tools from the organization's knowledge base
- PC3.** create or modify high level scenarios and test cases relevant to the requirements
- PC4.** create or modify automated scripts and test data as per requirement
- PC5.** review and rework on the test plan, test cases and/or automated scripts with consultation from supervisor or industry experts
- PC6.** submit the test plan, test cases and/or automated scripts for approval by experts
- PC7.** update the organization's knowledge base with the inputs for designing tests for software products/applications/modules
- PC8.** comply with the organization's policies, procedures and guidelines when designing tests for software products/applications/modules

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies, procedures and processes for designing tests for software products/ applications/ modules including individual role and responsibilities
- KU2.** the scope of work to be carried out and the importance of keeping within these boundaries
- KU3.** the application and use of software testing tools
- KU4.** whom to be involved to provide feedback on the work and how to use feedback to improve tests
- KU5.** different sources of information available for designing tests and how to access these
- KU6.** the approval process for software products/applications/modules/tests
- KU7.** issues that may occur with the testing requirements and how to address these

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- KU8.** the concept and principles of designing tests and code coverage
- KU9.** different automated test tools and how to select the best available
- KU10.** how to create suitable tests for particular applications and check their suitability for automation
- KU11.** how to access, create and modify different types of: a) high level scenarios b) test cases c) automatic scripts d) test data e) test plans
- KU12.** scripting / programming of languages to understand test cases and current practices in the industry

## Generic Skills (GS)

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

- GS1.** listen actively and communicate with others orally and in writing
- GS2.** seek inputs and suggestions from industry experts
- GS3.** identify the gaps and anomalies in fetched data and analyze the same
- GS4.** draw a conclusive plan to complete the tasks within given deadlines
- GS5.** handle multiple tasks concurrently
- GS6.** use scripting and programming languages including: C C++ SQL Java .Net VB, etc.
- GS7.** apply problem-solving approaches in different situation
- GS8.** configure data and disseminate relevant information and constructive opinions, applying balanced judgments to different situations
- GS9.** practice utilizing information technology efficiently to insert or extract data accurately
- GS10.** work with the obtained information keeping data source intact
- GS11.** make yourself familiar with current changes in procedures and practices in the role

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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	<b>25</b>	<b>75</b>	-	-
<b>PC1.</b> identify any issues with the requirements for testing and clarify these with supervisors	10	-	-	-
<b>PC2.</b> access reusable scenarios, test cases, scripts and tools from the organization's knowledge base	-	5	-	-
<b>PC3.</b> create or modify high level scenarios and test cases relevant to the requirements	-	15	-	-
<b>PC4.</b> create or modify automated scripts and test data as per requirement	-	15	-	-
<b>PC5.</b> review and rework on the test plan, test cases and/or automated scripts with consultation from supervisor or industry experts	10	20	-	-
<b>PC6.</b> submit the test plan, test cases and/or automated scripts for approval by experts	5	-	-	-
<b>PC7.</b> update the organization's knowledge base with the inputs for designing tests for software products/applications/modules	-	10	-	-
<b>PC8.</b> comply with the organization's policies, procedures and guidelines when designing tests for software products/applications/modules	-	10	-	-
<b>NOS Total</b>	<b>25</b>	<b>75</b>	-	-

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N1301
<b>NOS Name</b>	Design tests for software products/applications/modules
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services
<b>Occupation</b>	Testing and Quality Assurance, Software Testing, Testing and QA
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022



## Qualification Pack

### SSC/N1302: Carry out automated tests on software products/applications/modules

#### Description

This unit is about carrying out automated tests to verify the functionality, usability, compatibility, security and/ or performance of embedded software products/applications/ modules.

#### Scope

The scope covers the following :

- Conduct testing like functional, usability, compatibility, security, performance regression, etc.
- Analyze defects like bugs in the software applications, problems in the test environment, problems in the test scripts, requirement problems, etc.
- Interact with appropriate people like colleagues at the IT helpdesk, members of technical team, subject matter experts, subject matter experts outside the organization, line manager, etc.

#### Elements and Performance Criteria

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

- PC1.** establish with superiors the nature of testing to be carried out and the test management tool to be used
- PC2.** verify that the latest and correct versions of the test cases and automated scripts are used
- PC3.** execute the automated test scripts according to instructions
- PC4.** log the test progress, results and defects discovered, using the agreed test management tool
- PC5.** analyze the results to develop a clear understanding of the defects and discuss the same during defect management discussions
- PC6.** obtain advice and guidance from industry experts in case of problems with testing that are beyond the level of competence
- PC7.** comply with the organization's policies, procedures and guidelines when carrying out automated tests on software products/applications/modules

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies, procedures and priorities for carrying out automated tests on software products/applications/modules and the role in applying these
- KU2.** when and who to refer problems to when they are outside the area of competence
- KU3.** different sources of information and methodologies available for carrying out automated tests and how to access these
- KU4.** how to carry out automated test scripts correctly
- KU5.** types of automation tools and their applicability to different test types
- KU6.** scripting / programming languages to understand test cases



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- KU7.** problems that may occur with automated testing and how to re-create failure scenarios
- KU8.** how to analyze and interpret the automated test results
- KU9.** the current practice for carrying out automated tests on software products/applications/modules

## Generic Skills (GS)

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

- GS1.** apply competency skills to solve problems in different situations
- GS2.** analyze data and refer anomalies to provide accurate reports to the supervisor
- GS3.** listen effectively and orally communicate information accurately
- GS4.** ask for clarification and advice from peers
- GS5.** work effectively in a customer facing environment
- GS6.** configure data and disseminate relevant information to others
- GS7.** provide opinions on work in a detailed and constructive way
- GS8.** use information technology effectively to input and/or extract data
- GS9.** use scripting and programming languages including: C, C++, SQL, Java .Net VB, etc.

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
<b>PC1.</b> establish with superiors the nature of testing to be carried out and the test management tool to be used	6.25	-	-	-
<b>PC2.</b> verify that the latest and correct versions of the test cases and automated scripts are used	-	25	-	-
<b>PC3.</b> execute the automated test scripts according to instructions	-	12.5	-	-
<b>PC4.</b> log the test progress, results and defects discovered, using the agreed test management tool	-	18.75	-	-
<b>PC5.</b> analyze the results to develop a clear understanding of the defects and discuss the same during defect management discussions	6.25	18.75	-	-
<b>PC6.</b> obtain advice and guidance from industry experts in case of problems with testing that are beyond the level of competence	6.25	-	-	-
<b>PC7.</b> comply with the organization's policies, procedures and guidelines when carrying out automated tests on software products/applications/modules	6.25	-	-	-
<b>NOS Total</b>	<b>25</b>	<b>75</b>	<b>-</b>	<b>-</b>

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N1302
<b>NOS Name</b>	Carry out automated tests on software products/applications/modules
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services
<b>Occupation</b>	Testing and Quality Assurance, Software Testing, Testing and QA
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### SSC/N1303: Carry out manual tests on software products/applications/modules

#### Description

This unit is about carrying out manual tests to verify the functionality, usability, compatibility, security and/or performance of embedded software products/applications/ modules.

#### Scope

The scope covers the following :

- Conduct testing like functional usability, compatibility, security, performance regression, etc.
- Take appropriate action in event of failure like apply different values or apply different data
- Interact with appropriate people like colleagues at the IT helpdesk, members of technical team, subject matter experts outside the organization, line manager, etc.

#### Elements and Performance Criteria

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

- PC1.** verify that the latest and correct versions of the test cases and automated scripts are being used
- PC2.** execute the manual test scripts according to instructions and take action in event of failure
- PC3.** verify conformance to usability guidelines in case of usability testing
- PC4.** log the test progress, results and defects discovered, using the agreed test management tool
- PC5.** analyze results to develop a clear understanding of the defects and discuss the same in open houses
- PC6.** obtain advice and guidance from supervisors in case problems with testing are beyond the level of competence
- PC7.** comply with the organization's policies, procedures and guidelines when carrying out manual tests on software products/applications/modules

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies, procedures and priorities for carrying out manual tests on software products/applications/modules
- KU2.** when and who to refer problems to, when they are outside the area of competence
- KU3.** different sources of information and methodologies available for carrying out manual tests and how to access these
- KU4.** how to carry out manual test scripts correctly
- KU5.** how to decide which software products/applications/ modules are suitable for testing
- KU6.** scripting / programming languages to understand test cases
- KU7.** problems that may occur with manual testing and how to re-create failure scenarios

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**KU8.** how to analyze and interpret the manual test results

**KU9.** the current practice for carrying out manual tests on software products/applications/modules

### Generic Skills (GS)

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

**GS1.** apply competency skills to solve problems in different situations

**GS2.** analyze data and refer anomalies to provide accurate reports to the supervisor

**GS3.** listen effectively and orally communicate information accurately

**GS4.** ask for clarification and advice from peers

**GS5.** work effectively in a customer facing environment

**GS6.** configure data and disseminate relevant information to others

**GS7.** provide opinions on work in a detailed and constructive way

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
<b>PC1.</b> verify that the latest and correct versions of the test cases and automated scripts are being used	6.25	12.5	-	-
<b>PC2.</b> execute the manual test scripts according to instructions and take action in event of failure	-	12.5	-	-
<b>PC3.</b> verify conformance to usability guidelines in case of usability testing	-	12.5	-	-
<b>PC4.</b> log the test progress, results and defects discovered, using the agreed test management tool	-	12.5	-	-
<b>PC5.</b> analyze results to develop a clear understanding of the defects and discuss the same in open houses	12.5	12.5	-	-
<b>PC6.</b> obtain advice and guidance from supervisors in case problems with testing are beyond the level of competence	6.25	-	-	-
<b>PC7.</b> comply with the organization's policies, procedures and guidelines when carrying out manual tests on software products/applications/modules	-	12.5	-	-
<b>NOS Total</b>	<b>25</b>	<b>75</b>	<b>-</b>	<b>-</b>

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N1303
<b>NOS Name</b>	Carry out manual tests on software products/applications/modules
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services
<b>Occupation</b>	Testing and Quality Assurance, Software Testing, Testing and QA
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022



## Qualification Pack

### SSC/N9001: Manage your work to meet requirements

#### Description

This unit is about planning and organizing your work in order to complete it to the required standards on time.

#### Scope

The scope covers the following :

- Utilise resources
- Ensure compliance

#### Elements and Performance Criteria

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

**PC1.** establish and agree your work requirements with appropriate people

**PC2.** keep the immediate work area clean and tidy

**PC3.** utilize time effectively

**PC4.** use resources correctly and efficiently

**PC5.** treat confidential information correctly

**PC6.** work in line with the organization's policies and procedures

**PC7.** work within the limits of the job role

**PC8.** obtain guidance from appropriate people, where necessary

**PC9.** ensure the work meets the agreed requirements

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

**KU1.** the priorities for the area of work

**KU2.** role, responsibilities, limits of the responsibilities and whom these must be agreed with, as well as when to involve others

**KU3.** the importance of having a tidy work area and how to do this

**KU4.** how to prioritize your workload according to urgency and importance and the benefits of this

**KU5.** the organizations policies and procedures, especially for dealing with confidential information, and the importance of complying with these

**KU6.** the purpose of keeping others updated with the progress of the work

**KU7.** the purpose and value of being flexible and adapting work plans to reflect change

**KU8.** the importance of completing work accurately and how to do this

**KU9.** appropriate timescales for completing the work and the implications of not meeting these for self and the organization

**KU10.** resources needed for the work and how to obtain and use these

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### Generic Skills (GS)

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

- GS1.** read instructions, guidelines, procedures, rules and service level agreements
- GS2.** ask for clarification and advice from line managers
- GS3.** communicate orally with colleagues
- GS4.** make decisions on suitable courses
- GS5.** plan and organize the work to achieve targets and deadlines
- GS6.** agree to objectives and work requirements
- GS7.** deliver consistent and reliable service to customers
- GS8.** check that the work meets customer requirements
- GS9.** refer anomalies to the line manager
- GS10.** seek clarification on problems from others
- GS11.** provide relevant information to others
- GS12.** analyze needs, requirements and dependencies in order to meet the work requirements
- GS13.** apply judgments to different situations
- GS14.** ensure the work is complete and free from errors
- GS15.** get the work checked by peers
- GS16.** work effectively in a team environment
- GS17.** use information technology effectively, to input and/or extract data accurately
- GS18.** identify and refer anomalies in data
- GS19.** store and retrieve information
- GS20.** keep up to date with changes, procedures and practices in the role

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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
	25	75	-	-
<b>PC1.</b> establish and agree your work requirements with appropriate people	-	6.25	-	-
<b>PC2.</b> keep the immediate work area clean and tidy	6.25	6.25	-	-
<b>PC3.</b> utilize time effectively	6.25	6.25	-	-
<b>PC4.</b> use resources correctly and efficiently	6.25	12.5	-	-
<b>PC5.</b> treat confidential information correctly	-	6.25	-	-
<b>PC6.</b> work in line with the organization's policies and procedures	-	12.5	-	-
<b>PC7.</b> work within the limits of the job role	-	6.25	-	-
<b>PC8.</b> obtain guidance from appropriate people, where necessary	-	6.25	-	-
<b>PC9.</b> ensure the work meets the agreed requirements	6.25	12.5	-	-
<b>NOS Total</b>	<b>25</b>	<b>75</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N9001
<b>NOS Name</b>	Manage your work to meet requirements
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQF Clearance Date</b>	31/03/2022

## Qualification Pack

### SSC/N9002: Work effectively with colleagues

#### Description

This unit is about working effectively with colleagues, either in your own work group or in other work groups within your organization.

#### Scope

The scope covers the following :

- Communicate with colleagues
- Show respect

#### Elements and Performance Criteria

##### *Communicate with colleagues*

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

- PC1.** communicate with colleagues clearly, concisely and accurately
- PC2.** work with colleagues to integrate the work effectively with theirs
- PC3.** pass on essential information to colleagues in line with organizational requirements

##### *Show respect*

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

- PC4.** work in ways that show respect for colleagues
- PC5.** carry out commitments one has made to colleagues
- PC6.** identify any problems while working with colleagues and take the initiative to solve these problems
- PC7.** follow the organization's policies and procedures for working with colleagues

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies and procedures for working with colleagues and the role 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.** benefits of developing productive working relationships with colleagues
- KU5.** the importance of creating an environment of trust and mutual respect in an environment where there is no authority over those working with
- KU6.** where you do not meet the commitments, the implications this will have on individuals and the organization

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- KU7.** different types of information that colleagues might need and the importance of providing this information when it is required
- KU8.** the importance of understanding problems from the colleagues perspective and how to provide support, where necessary, to resolve these

## Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** communicate effectively with colleagues in writing
- GS3.** read instructions, guidelines, procedures, rules and service level agreements
- GS4.** make decisions on suitable courses
- GS5.** ask for clarification and advice from line managers
- GS6.** help reach agreements with colleagues
- GS7.** plan and organize the work to achieve targets and deadlines
- GS8.** ensure the work meets customer requirements, and deliver consistent and reliable service
- GS9.** apply problem solving approaches in different situations
- GS10.** apply balanced judgments to different situations
- GS11.** ensure the work is complete and free from errors
- GS12.** ensure the work is complete and free from errors
- GS13.** work effectively with colleagues and other teams in a team environment
- GS14.** treat other cultures with respect
- GS15.** identify and refer anomalies
- GS16.** keep up to date with changes, procedures and practices in the role

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### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Communicate with colleagues</i>	18	30	-	-
<b>PC1.</b> communicate with colleagues clearly, concisely and accurately	-	20	-	-
<b>PC2.</b> work with colleagues to integrate the work effectively with theirs	-	10	-	-
<b>PC3.</b> pass on essential information to colleagues in line with organizational requirements	18	-	-	-
<i>Show respect</i>	2	50	-	-
<b>PC4.</b> work in ways that show respect for colleagues	2	20	-	-
<b>PC5.</b> carry out commitments one has made to colleagues	-	10	-	-
<b>PC6.</b> identify any problems while working with colleagues and take the initiative to solve these problems	-	10	-	-
<b>PC7.</b> follow the organization's policies and procedures for working with colleagues	-	10	-	-
<b>NOS Total</b>	<b>20</b>	<b>80</b>	-	-

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### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N9002
<b>NOS Name</b>	Work effectively with colleagues
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022



## Qualification Pack

### SSC/N9003: Maintain a healthy, safe and secure working environment

#### Description

This unit is about monitoring your working environment and making sure it meets requirements for health, safety and security

#### Scope

The scope covers the following :

- Ensure compliance
- Follow safety procedure

#### Elements and Performance Criteria

##### *Ensure compliance*

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

- PC1.** comply with the organization's current health, safety and security policies and procedures
- PC2.** report any identified breaches in health, safety, and security policies and procedures to the designated person
- PC3.** identify and correct any hazards that you can deal with safely, competently and within the limits of your authority
- PC4.** report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected

##### *Follow safety procedure*

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

- PC5.** follow the organization's emergency procedures promptly, calmly, and efficiently
- PC6.** identify and recommend opportunities for improving health, safety, and security to the designated person
- PC7.** complete any health and safety records legibly and accurately

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** legislative requirements and organization's procedures for health, safety and security and your role and responsibilities in relation to this
- KU2.** what is meant by a hazard, including the different types of health and safety hazards that can be found in the workplace
- KU3.** how and when to report hazards
- KU4.** limits of your responsibility for dealing with hazards
- KU5.** the organization's emergency procedures for different emergency situations and the importance of following these
- KU6.** the importance of maintaining high standards of health, safety and security

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- KU7.** implications that any non-compliance with health, safety and security may have on individuals and the organization
- KU8.** types of breaches in health, safety and security and how and when to report these
- KU9.** evacuation procedures for workers and visitors
- KU10.** how to summon medical assistance and the emergency services, where necessary
- KU11.** how to use the health, safety and accident reporting procedures and the importance of these
- KU12.** government agencies in the areas of safety, health and security and their norms and services

## Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** listen effectively and orally communicate information accurately
- GS4.** make decisions on suitable courses of action
- GS5.** plan and organize your work to meet health, safety and security requirements
- GS6.** build and maintain positive and effective relationships with colleagues and customers
- GS7.** apply problem solving approaches in different situations
- GS8.** analyze data and activities
- GS9.** apply balanced judgments to different situations
- GS10.** check that the work is complete and free from errors
- GS11.** work effectively in a team environment
- GS12.** identify and refer anomalies
- GS13.** help reach agreements with colleagues
- GS14.** keep up to date with changes, procedures and practices in the job role

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure compliance</i>	<b>20</b>	<b>40</b>	-	-
<b>PC1.</b> comply with the organization's current health, safety and security policies and procedures	10	10	-	-
<b>PC2.</b> report any identified breaches in health, safety, and security policies and procedures to the designated person	-	10	-	-
<b>PC3.</b> identify and correct any hazards that you can deal with safely, competently and within the limits of your authority	10	10	-	-
<b>PC4.</b> report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected	-	10	-	-
<i>Follow safety procedure</i>	<b>10</b>	<b>30</b>	-	-
<b>PC5.</b> follow the organization's emergency procedures promptly, calmly, and efficiently	10	10	-	-
<b>PC6.</b> identify and recommend opportunities for improving health, safety, and security to the designated person	-	10	-	-
<b>PC7.</b> complete any health and safety records legibly and accurately	-	10	-	-
<b>NOS Total</b>	<b>30</b>	<b>70</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N9003
<b>NOS Name</b>	Maintain a healthy, safe and secure working environment
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	27/01/2025
<b>NSQC Clearance Date</b>	27/01/2022

## Qualification Pack

### SSC/N9004: Provide data/information in standard formats

#### Description

This unit is about providing specified data/information related to your work in templates or other standard formats.

#### Scope

The scope covers the following :

- Obtain information
- Analyze and report information

#### Elements and Performance Criteria

##### *Obtain information*

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

- PC1.** establish and agree with appropriate people the data/information you need to provide, the formats in which you need to provide it, and when you need to provide it
- PC2.** obtain the data/information from reliable sources
- PC3.** check that the obtained data/information is accurate, complete and up-to-date
- PC4.** obtain advice or guidance from appropriate people where there are problems with the data/information

##### *Analyze and report information*

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

- PC5.** carry out rule-based analysis of the data/information, if required
- PC6.** insert the data/information into the agreed formats
- PC7.** report any unresolved anomalies in the data/ information to appropriate people
- PC8.** provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's procedures and guidelines for providing data/information in standard formats and the role and responsibilities in relation to this
- KU2.** the knowledge management culture of the organization
- KU3.** the organization's policies and procedures for recording and sharing information and the importance of complying with these
- KU4.** the importance of validating data/information before use and how to do this
- KU5.** procedures for updating data in appropriate formats and with proper validation
- KU6.** the purpose of the CRM database

## Qualification Pack

- KU7.** how to use the CRM database to record and extract information
- KU8.** the importance of having data/information reviewed by others
- KU9.** the scope of any data/information requirements including the level of detail required
- KU10.** the importance of keeping within the scope of work and adhering to timescales
- KU11.** data/information one may need to provide including the sources and how to do this
- KU12.** templates and formats used for data/information including their purpose and how to use these
- KU13.** different techniques used to obtain data/information and how to apply these
- KU14.** rule-based analysis on the data/information
- KU15.** typical anomalies that may occur in data/information
- KU16.** whom to go to in the event of inaccurate data/information and how to report this

## Generic Skills (GS)

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

- GS1.** complete accurate, well written work with attention to detail
- GS2.** read instructions, guidelines, procedures, rules and service level agreements
- GS3.** listen effectively and orally communicate information accurately
- GS4.** follow rule-based decision-making processes
- GS5.** make decisions on suitable courses of action
- GS6.** plan and organize the work to achieve targets and deadlines
- GS7.** check the work meets customer requirements and exceed customer expectations
- GS8.** apply problem solving approaches in different situations
- GS9.** configure data and disseminate relevant information to others
- GS10.** apply balanced judgments to different situations
- GS11.** use information technology effectively, to input and/or extract data accurately
- GS12.** validate and update data
- GS13.** store and retrieve information

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Obtain information</i>	<b>18.75</b>	<b>31.25</b>	-	-
<b>PC1.</b> establish and agree with appropriate people the data/information you need to provide, the formats in which you need to provide it, and when you need to provide it	12.5	-	-	-
<b>PC2.</b> obtain the data/information from reliable sources	-	12.5	-	-
<b>PC3.</b> check that the obtained data/information is accurate, complete and up-to-date	6.25	6.25	-	-
<b>PC4.</b> obtain advice or guidance from appropriate people where there are problems with the data/information	-	12.5	-	-
<i>Analyze and report information</i>	<b>6.25</b>	<b>43.75</b>	-	-
<b>PC5.</b> carry out rule-based analysis of the data/information, if required	-	25	-	-
<b>PC6.</b> insert the data/information into the agreed formats	-	12.5	-	-
<b>PC7.</b> report any unresolved anomalies in the data/ information to appropriate people	6.25	-	-	-
<b>PC8.</b> provide complete, accurate and up-to-date data/information to the appropriate people in the required formats on time	-	6.25	-	-
<b>NOS Total</b>	<b>25</b>	<b>75</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N9004
<b>NOS Name</b>	Provide data/information in standard formats
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services, Business Process Management, Engineering R&D, Software Product Development, IT Support Services, Software Products, Future Skills
<b>Occupation</b>	Generic
<b>NSQF Level</b>	4
<b>Credits</b>	TBD
<b>Version</b>	2.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022



## Qualification Pack

### SSC/N9014: Maintain an inclusive, environmentally sustainable workplace

#### Description

The unit is about implementing and improving diversity equality and inclusion in a sustainable and environment friendly workplace.

#### Scope

The scope covers the following :

- Sustainable Practices
- Respect diversity and strengthen practices to promote equity (equality)/inclusivity

#### Elements and Performance Criteria

##### *Sustainable Practices*

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

- PC1.** optimize usage of electricity/energy, materials, and water in various asks / activities / processes and plan the implementation of energy efficient systems in a phased manner
- PC2.** segregate recyclable, non-recyclable and hazardous waste generated for disposal or efficient waste management

##### *Respect diversity and strengthen practices to promote equity (equality)/inclusivity*

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

- PC3.** understand the diversity policy of the organization and use internal & external communication to colleagues to improve
- PC4.** comply with PwD inclusive policies for an adaptable and equitable work environment
- PC5.** improve through specifically designed recruitment practices, PwD friendly infrastructure, job roles, etc.
- PC6.** use and advocate for appropriate verbal/nonverbal communication, schemes and benefits of PwD.

#### Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** the organization's policies and procedures about gender inclusivity, equality and sustainability while working with colleagues and your role and responsibilities in relation to this
- KU2.** inclusive tools and practices of communication to acknowledge/validate, share and promote the cause of gender parity at workplace. For example - supporting women with mentorship programs, speaking out against discriminatory practices or harassment
- KU3.** the concept of gender, gender equality and gender discrimination, and all forms of gender discrimination, violence and inequality, including the current and historical causes of gender inequality in the workplace

## Qualification Pack

- KU4.** how to maintain and provide a conducive work environment that is free from any harassment. facilities and amenities to PwD to perform and excel in their role
- KU5.** organization's redressal mechanisms (like the POSH committee) to address harassment and bias at the workplace, with awareness of prevalent legislations against bias and sexual harassment
- KU6.** initiatives towards efficient use of natural resources and energy, reduction and prevention of pollution and promoting waste avoidance and recycling measures in line with internationally disseminated technologies and practices
- KU7.** all about various energy options including renewable and non-renewable with their environmental impacts, health issues, usage, safety and energy security
- KU8.** implications that any non-compliance with electricity and energy may have on individuals and the organization
- KU9.** the organization's electricity first aid emergency procedures
- KU10.** how to monitor, measure and report performance of environmental conservation
- KU11.** different types of electricity accidents, safety and security and how and when to report these
- KU12.** how to use the electricity/energy safety, accident reporting, emergency procedures and the importance of these

## Generic Skills (GS)

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

- GS1.** read PwD instructions, guidelines, procedures, diversity policies/acts, rules and service level agreements
- GS2.** be aware of one's own gender identity and gender role and respectful of the gender performances of others
- GS3.** organize team building or sensitization workshops to address gender biases, stereotypes and potentially blind spots
- GS4.** clarify personal norms and values related to energy production and usage as well as to reflect and evaluate their own energy usage in terms of efficiency and sufficiency
- GS5.** listen and communicate (oral) effectively and accurately on all PwD policies
- GS6.** apply balanced judgments in gender diversity situations
- GS7.** take action to reduce the carbon footprint of business activities and embed environmental responsibility
- GS8.** calibration session with employees to discuss gender biases, stereotypes and potentially blind spots

## Qualification Pack

### Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Sustainable Practices</i>	<b>10</b>	<b>30</b>	-	-
<b>PC1.</b> optimize usage of electricity/energy, materials, and water in various asks / activities / processes and plan the implementation of energy efficient systems in a phased manner	5	15	-	-
<b>PC2.</b> segregate recyclable, non-recyclable and hazardous waste generated for disposal or efficient waste management	5	15	-	-
<i>Respect diversity and strengthen practices to promote equity (equality)/inclusivity</i>	<b>10</b>	<b>50</b>	-	-
<b>PC3.</b> understand the diversity policy of the organization and use internal & external communication to colleagues to improve	5	10	-	-
<b>PC4.</b> comply with PwD inclusive policies for an adaptable and equitable work environment	-	10	-	-
<b>PC5.</b> improve through specifically designed recruitment practices, PwD friendly infrastructure, job roles, etc.	-	20	-	-
<b>PC6.</b> use and advocate for appropriate verbal/nonverbal communication, schemes and benefits of PwD.	5	10	-	-
<b>NOS Total</b>	<b>20</b>	<b>80</b>	-	-

## Qualification Pack

### National Occupational Standards (NOS) Parameters

<b>NOS Code</b>	SSC/N9014
<b>NOS Name</b>	Maintain an inclusive, environmentally sustainable workplace
<b>Sector</b>	IT-ITes
<b>Sub-Sector</b>	IT Services, Business Process Management, Engineering R&D, Software Product Development, Future Skills
<b>Occupation</b>	Generic,
<b>NSQF Level</b>	5
<b>Credits</b>	1
<b>Version</b>	1.0
<b>Last Reviewed Date</b>	27/01/2022
<b>Next Review Date</b>	31/03/2025
<b>NSQC Clearance Date</b>	31/03/2022

## Assessment Guidelines and Assessment Weightage

### Assessment Guidelines

1. Criteria for assessment for each Qualifications File will be approved by the Sector Skill Council. 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 approved 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 the theory part for each candidate at each examination/training centre (as per the 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.
6. To pass the Qualifications File, every trainee should score a minimum of 70 % of aggregate marks.

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

### 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
SSC/N1301.Design tests for software products/applications/modules	25	75	-	-	100	13
SSC/N1302.Carry out automated tests on software products/applications/modules	25	75	-	-	100	13
SSC/N1303.Carry out manual tests on software products/applications/modules	25	75	-	-	100	13
SSC/N9001.Manage your work to meet requirements	25	75	-	-	100	13
SSC/N9002.Work effectively with colleagues	20	80	-	-	100	12
SSC/N9003.Maintain a healthy, safe and secure working environment	30	70	-	-	100	12
SSC/N9004.Provide data/information in standard formats	25	75	-	-	100	12
SSC/N9014.Maintain an inclusive, environmentally sustainable workplace	20	80	-	-	100	12
<b>Total</b>	<b>195</b>	<b>605</b>	<b>-</b>	<b>-</b>	<b>800</b>	<b>100</b>

## Qualification Pack

### Acronyms

<b>NOS</b>	National Occupational Standard(s)
<b>NSQF</b>	National Skills Qualifications Framework
<b>QP</b>	Qualifications Pack
<b>TVET</b>	Technical and Vocational Education and Training
<b>IT-ITeS</b>	Information Technology - Information Technology enabled Services
<b>BPM</b>	Business Process Management
<b>BPO</b>	Business Process Outsourcing
<b>KPO</b>	Knowledge Process Outsourcing
<b>LPO</b>	LPO
<b>IPO</b>	Information Process Outsourcing

## Qualification Pack

### Glossary

<b>Sector</b>	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.
<b>Sub-sector</b>	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
<b>Occupation</b>	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
<b>Job role</b>	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
<b>Occupational Standards (OS)</b>	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.
<b>Performance Criteria (PC)</b>	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
<b>National Occupational Standards (NOS)</b>	NOS are occupational standards which apply uniquely in the Indian context.
<b>Qualifications Pack (QP)</b>	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.
<b>Unit Code</b>	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
<b>Unit Title</b>	Unit title gives a clear overall statement about what the incumbent should be able to do.
<b>Description</b>	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.
<b>Scope</b>	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.

## Qualification Pack

<b>Knowledge and Understanding (KU)</b>	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.
<b>Organisational Context</b>	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.
<b>Technical Knowledge</b>	Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
<b>Core Skills/ Generic Skills (GS)</b>	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.
<b>Electives</b>	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.
<b>Options</b>	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.
<b>Helpdesk</b>	Helpdesk is an entity to which the customers will report their IT problems. IT Service Helpdesk Attendant is responsible for managing the helpdesk.