Model Curriculum

Service Engineer - Installation and Commissioning

SECTOR: CAPITAL GOODS
SUB-SECTOR: MACHINE TOOLS, PLASTIC MANUFACTURING MACHINERY, TEXTILE MANUFACTURING MACHINERY, PROCESS PLANT MACHINERY, ELECTRICAL AND POWER MACHINERY

OCCUPATION: SERVICE
REF ID: CSC/Q0502, V1.0
NSQF LEVEL: 4

CAPITAL GOODS SKILL COUNCIL

Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

Skill India
कौशल भारत-कुशल भारत

CAPITAL GOODS SKILL COUNCIL

N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

CAPITAL GOODS SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: **' Service Engineer - Installation and Commissioning '**
QP No. **'CSC/ Q0502, NSQF Level 4'**

Date of Issuance: March 18th, 2015
Valid up to : August 30th, 2016

**Valid up to the next review date of the Qualification Pack or the 'Valid up to' date mentioned above (whichever is earlier)*

Authorised Signatory
(Capital Goods Skill Council)

TABLE OF CONTENTS

Service Engineer-Installation and Commissioning

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Service Engineer-Installation and Commissioning", in the "Capital Goods" Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	**Service Engineer-Installation and Commissioning**		
Qualification Pack Name & Reference ID. ID	CSC/Q0502, v1.0		
Version No.	1.0	**Version Update Date**	
Pre-requisites to Training	Diploma-Mechanical Engineering Minimum 1 year experience as a Service Engineer Installation		
Training Outcomes	**After completing this programme, participants will be able to:** • **Install mechanical equipment at site:** Installation of a range of mechanical equipment such as machine tools, process control equipment, rotating mechanical equipment, conveyors, equipment for lifting and handling, hydraulic press, furnaces, auto / manual welding machines, shot blasting machines, process plant equipment, in accordance with approved procedures. • **Commission mechanical equipment after installation at site:** Commissioning of mechanical equipment such as machine tools, process control equipment, rotating mechanical equipment, conveyors, equipment for lifting and handling, hydraulic press, furnaces, auto/manual welding machine, shot blasting machine, process plant equipment, in accordance with approved procedures. • **Basic health and safety practices at the workplace:** identify risks and hazards at workplace, use of PPE, and apply good housekeeping practices, etc., • **Work effectively with others:** effectively communicate with others and demonstrate good ethical practices and discipline.		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of "Service Engineer-Installation and Commissioning" Qualification Pack issued by "Capital Goods Skill Council".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	**Install Mechanical Equipment At site** **Theory Duration** (hh:mm) 20:00 **Practical Duration** (hh:mm) 100:00 **Corresponding NOS Code** CSC/N0501	• Explain common terms used in the installation of machinery and plant equipment • Read assembly drawings, layout drawings and manufacturer's guidelines • Interpret drawings, standards, quality control procedures • Undertake numerical operations, geometry and calculations • Solve algebraic linear equations • Perform trigonometric calculations • Define work power and energy and perform calculations using formulae • State SI units for work, power, energy, length, mass etc. • Define 'friction' and explain the impact of coefficient of friction • Define specific heat and latent heat and carryout calculations using formulae • Explain the need of various mechanical fasteners used in the installation – threaded fasteners, special securing devices, masonry fixing devices • Analyze torque requirement for threaded fasteners and explain the impact of under torque and over torque • List tools and instruments used for positioning, securing and aligning – spanners, wrenches, crow bars, torque wrenches, engineer's levels, alignment telescope, laser devices, straight edges, feeler gauges, spirit levels, mandrels, dial test indicator, vernier calliper, micrometer, depth gauge, taut wires, tension meter. Autocollimator, multi meter, right angles/square blocks • Explain the technique used to position, align ,level , and adjust the equipment • Follow safe material handling practices • Explain mechanical power transmission methods – belt drive, chain drive, coupling, clutch and brakes • Explain methods of connecting equipment to service supplies –Electrical, hydraulic, power transmission, compressed air or oils and fuel supplies • Follow safe working guidelines and safety regulations while performing installation	Training Kit (PowerPoint, Trainer Guide) spanners, wrenches, crow bars, torque wrenches, engineer's levels, alignment telescope, laser devices, straight edges, feeler gauges, spirit levels, mandrels, dial test indicator, vernier calliper, micrometer, depth gauge, taut wires, tension meter. Autocollimator, multi meter, right angles/square blocks

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Carryout site inspection before commencing installation activity for safe access or any other obstructions • Plan installation activities in an efficient and appropriate manner • Conduct survey and inspect the site for- accessibility, obstructions or hazards • carryout load test to access the suitability of the foundation for installation • Collect appropriate utilities for the installation activity • Check tools and equipment for any damage ,wear or tear • Perform numerical calculations required for commissioning • Solve linear algebraic equations • Organize required material handling devices like cranes and fork lifts • Plan , organize and prioritize sequence of operation as per the sequence • Carryout installation as per specification and installation guidelines • Perform routing modifications/alterations as per the standard operating procedure • Carryout levelling, aligning , coupling and connecting as per the instruction sheet • Check the installed activity for the proper functioning o Input/output voltage levels o Functioning of hydraulic system o Functioning of fans, motors, alternators etc. o Functioning of sub parts o Oil and coolant level o Functioning of the equipment • Make adjustments, appropriate to the equipment being installed • Fill up technical charts, process charts and other documents as required • Communicate with colleagues and supervisor • Demonstrate active listening skills • Perform basic operations on computer • Use basic office applications like word processing spread sheet etc. • Demonstrate problem solving skills • Work in a team to achieve better results • Follow correct communication protocols with customers • Apply, analyze, and evaluate the information gathered from observation,	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		experience, reasoning, or communication, as a guide to thought and action	

2	**Commission Mechanical Equipment after Installation at Site**
	
	Theory Duration
	(hh:mm)
	20:00
	
	Practical Duration
	(hh:mm)
	100:00
	
	Corresponding NOS Code
	CSC/N0502
		• Explain safe working practices to be followed at site of commissioning
		• Undertake numerical operations, geometry and calculations
		• Solve algebraic linear equations
		• Perform trigonometric calculations
		• Define work power and energy and perform calculations using formulae
		• State SI units for work, power, energy, length, mass etc.
		• Define 'friction' and explain the impact of coefficient of friction
		• Define specific heat and latent heat and carryout calculations using formulae
		• Explain the need of various mechanical fasteners used in the installation – threaded fasteners, special securing devices, masonry fixing devices
		• Comply with health and safety, environmental guidelines at the work place
		• List hazards associate with commissioning operations
		• Keep the work are clean and safe from hazards
		• State actions to be taken to avoid hazards during the commissioning
		• Identify Personal Protective Equipment required for commissioning as per the task
		• Define some common terms used in commissioning
		• Analyze engineering drawings , standards, quality control procedures and specifications used for commissioning
		• Choose correct commissioning sequence from the drawing
		• Analyze the equipment to be commissioned, its operating procedures and functions
		• Carryout preliminary checks on the equipment
		  ○ Setting travel
		  ○ Setting backlash in gears
		  ○ Setting working clearance
		  ○ Check operating tension
		  ○ Level of oil /fluids
			Training Kit (PowerPoint, Trainer Guide)
			
			spanners, wrenches, crow bars, torque wrenches, engineer's levels, alignment telescope, laser devices, straight edges, feeler gauges, spirit levels, mandrels, dial test indicator, vernier calliper, micrometer, depth gauge, taut wires, tension meter. Autocollimator, multi meter, right angles/square blocks, Mandrels, Tension meter, Speed measuring devices, Flow testing devices

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		○ Validate 'level' and 'alignment' ○ Operating pressure in the system ○ Visual checks for damages and completeness ○ Guards for moving parts ○ Any obstructions for the moving parts ○ Validate torque settings of fasteners ○ Check for locking devices • Evaluate procedures to be applied for commissioning activity • Prepare a plan for fault diagnostics that may arise during the commissioning • Gather required devices for commissioning ○ Linear measuring instruments ○ Speed measuring devices ○ Multimeter ○ Continuity tester ○ Pressure testing devices ○ Flow testing devices ○ PLC/PC equipment ○ Tension meter ○ Dial gauges ○ Mandrels • Explain method and technique used in dismantling mechanical equipment ○ Release of force/pressure ○ Proof marking of components ○ Component removal by extraction or pressing • Explain the method for re assembling of mechanical components • State the application of electronic components used in the machine • Explain electrical connections used in the machine • Gather required tools and equipment required for commissioning • Seek permission from the relevant authority to carryout commissioning • Isolate equipment from electricity , gas or fluids during commissioning • Gather required information for commissioning ○ Client requirement ○ Equipment specification ○ Manufacturer's recommendation ○ Regulations and guidelines ○ Environmental requirement	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		○ Installation reports ○ Commissioning procedures ○ Product/process specification ○ Resources required to proceed with commissioning ○ Drawings of assembly and circuits • List start up procedures to confirm the functioning of the equipment • Run equipment at the recommended setting and evaluate the following ○ Check for leaks ○ Sensory checks • Refer operating sequence and check for proper functioning of the equipment • Increase the load gradually and make necessary adjustments to settings to achieve the specification parameter • Conduct the trial run of the equipment at full power/speed/ flow etc. • Evaluate the final product or process outcomes to meet desired specifications • Record observations and measurements • Take corrective actions in case of any malfunction in the equipment • Identify installation defects and take corrective actions ○ Leaks due to poor seals ○ Misaligned guarding ○ Patch holes ○ Unplugged fasteners ○ Misalignment ○ Improper fasteners or connections ○ Transit damage ○ Improper floor or grouting ○ Unwanted vibrations ○ Contamination ○ Rusting etc. • Replace defective parts if required • Carryout required documentation ○ Commissioning/log report (Checks and tests undertaken, installation fails, probable causes or sources, actions taken) ○ Non conformance report ○ Job sheet ○ Customer specific documentation • Resolve customer's complaints or queries if any • Perform basic operations on a computer • Use MS Office suite	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		• Use ERP software and other organizational software specific to quality function • Use e-mail for communication • Demonstrate problem solving abilities • Plan and sequence commissioning activities • Take part in team activities and coordinate with colleagues to achieve the task of commissioning • Ensure customer satisfaction • Apply, analyze, and evaluate the information gathered from observation, experience, reasoning, or communication, as a guide to thought and action	
3	**Health and safety** **Theory Duration** (hh:mm) 10:00 **Practical Duration** (hh:mm) 08:00 **Corresponding NOS Code** CSC/N1335	• Explain the importance of personal protective equipment (PPE) required for gas cutting operation • State the causes for accidents • Identify job site hazardous work and state possible causes of risk or accident at the workplace • Explain the importance of '5S' at the workplace	Training kit (Trainer guide, PowerPoint) Personal Protective Equipment (PPE)
4	**Fire Safety** **Theory Duration** (hh:mm) 05:00 **Practical Duration** (hh:mm) 30:00 **Corresponding NOS Code** CSC/N1335	• Explain types of fires - Class A, B, C and D • Select appropriate fire extinguisher to control fire • Use PASS method to operate a fire extinguisher • Follow fire safety signs and safe evacuation method in case of a fire • Identify the location of assembly point, fire exit, fire alarm • Follow reporting procedure in case of a fire	Training kit (Trainer guide, PowerPoint) Class A, B, C, D and K fire extinguishers
5	**Emergencies, rescue and first aid procedure** **Theory Duration** (hh:mm) 09:00	• Follow electrical safety procedures • Use approved method to rescue a person from electrocution • State the importance of first aid • Identify the contents of a first aid kit and their application • Administer first aid in case of bleeding,	Training kit (Trainer guide, PowerPoint) First aid kit with all contents

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 18:00 **Corresponding NOS Code** CSC/N1335	burns, choking, electrical shock, poisoning, etc. • Use of CPR process • Bandage wounds • Explain stages of crisis and crisis management • Prepare an incident report	
6	**Work effectively with others** **Theory Duration** (hh:mm) 20:00 **Practical Duration** (hh:mm) 60:00 **Corresponding NOS Code** CSC/N1336	• Explain the importance of team work and team dynamics • State 4Cs of working in a team • Explain types of communication • Apply effective communication technique • Overcome barriers to effective communication • Demonstrate active listening skills • Demonstrate good customer service skills • Explain the importance of ethical behaviour in your day-to-day work • State the importance of discipline in life and apply the same at workplace	Training kit (Trainer guide, PowerPoint)
	Total Duration **Theory Duration** **84:00** **Practical Duration** **316:00**	**Unique Equipment Required:** spanners, wrenches, crow bars, torque wrenches, engineer's levels, alignment telescope, laser devices, straight edges, feeler gauges, spirit levels, mandrels, dial test indicator, vernier calliper, micrometer, depth gauge, taut wires, tension meter. Autocollimator, multi meter, right angles/square blocks, Personal Protective Equipment, Mandrels , Speed measuring devices , Pressure testing devices, Flow testing devices , Tension meter ,Class A, B, C, D and K fire extinguishers, First aid kit with all contents	

Grand Total Course Duration: **400 Hours, 0 Minutes**

*(This syllabus/ curriculum has been approved by **Capital Goods Skill Council**)*

Trainer Prerequisites for Job role: "Service Engineer-Installation and Commissioning" mapped to Qualification Pack: "CSC/Q0502 v1.0"

Sr. No.	Area	Details
1	**Description**	Perform installation and commissioning for a range of mechanical equipment such as machine tools, process control equipment, rotating mechanical equipment, conveyors, equipment for lifting and handling, hydraulic press, furnaces, auto / manual welding machines, shot blasting machines, process plant equipment, in accordance with approved procedures.
2	**Personal Attributes**	Basic communication, numerical and computational abilities. Openness to learning, ability to plan and organize own work and identify and solve problems in the course of working. Understanding the need to take initiative and manage self and work to improve efficiency and effectiveness.
3	**Minimum Educational Qualifications**	Degree in Mechanical Engineering
4a	**Domain Certification**	Certified for Job Role: "Service Engineer- Installation and Commissioning" mapped to QP: "CSC/Q0502, v1.0". Minimum accepted score is 80%
4b	**Platform Certification**	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/Q0102". Minimum accepted as per respective SSC guidelines is 80%.
5	**Experience**	• 5-6 years of industry experience in the relevant field • 1-2 years of teaching experience

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Service Engineer-Installation and Commissioning
Qualification Pack	CSC/Q0502, v1.0
Sector Skill Council	Capital Goods Skill Council

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (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 the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
5	To pass the Qualification Pack , every trainee should score a minimum of 70% in every NOS.
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

Assessable Outcome	Assessment Criteria	Total Mark (400)	Out Of	Marks Allocation	
				Theory	Skills Practical
1.CSC/N0501 Install mechanical equipment at site	PC1.comply with health and safety, environmental and other relevant regulations and guidelines at work	100	3	1	2
	PC2.adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing installation operations		4	1	3
	PC3.ensure work area is clean and safe from hazards		2	0	2
	PC4.ensure that all tools, equipment, power tool cables, extension leads are in a safe and usable condition		2	0	2
	PC5.obtain clearance to carry out the installation activities		2	0	2
	PC6.provide safe access and working arrangements for the installation area		3	0	3
	PC7.ensure safe isolation of services during the installation		2	0	2
	PC8.dispose of waste items in a safe and environmentally acceptable manner		2	1	1
	PC9.leave the work area in a safe condition and free from foreign object debris		2	0	2
	PC10.plan the installation activities in an efficient and appropriate manner		3	1	2
	PC11.activities in an efficient and appropriate manner installation survey and inspect the site and foundation for the following		3	0	3
	PC12.ensure that appropriate utilities are available (eg. gas, water, air, electricity)		2	0	2
	PC13.ensure that required installation consumables are available		2	0	2
	PC14.ensure that safety and environmental conditions can be met		3	1	2
	PC15.obtain necessary permits to carry out the required work		2	0	2
	PC16.check the installation job specification documentation are available and correct		2	0	2
	PC17.instruct and supervise marking out of positioning and layouts		2	0	2
	PC18.check and record for any physical damages to the machine/equipment		2	0	2
	PC19.compare received product and accessories with product order specifications		3	1	2
	PC20.take appropriate action in lieu with manufacturer and customer, in case of any deviations		3	0	3

Assessable Outcome	Assessment Criteria	Total Mark (400)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC21.instruct and supervise use of grouting and adhesives after conducting foundation/site inspection		3	0	3
	PC22.instruct and supervise drilling holes for rig and anchor bolts		3	0	3
	PC23.instruct and supervise the movement and positioning of equipment, using cranes or forklifts as per the layout		3	1	2
	PC24.remove moisture absorbent bags, rust preventive, locking devices		2	0	2
	PC25.fill oils for lubrication, hydraulic and other special oils		2	0	2
	PC26.ensure the machine is clean		1	0	1
	PC27.install the machine in accordance with manufacturers' and site specifications		4	1	3
	PC28.perform routine modifications/alterations as per standard operating procedures or in consultation with manufacturer and customer, where required		5	2	3
	PC29.use the various installation tools and equipment as required		2	0	2
	PC30.apply installation techniques like leveling, aligning, coupling and connecting in accordance with specifications		4	1	3
	PC31.fill coolants, oil and other fluids as per specifications		3	1	2
	PC32.ensure the site is cleaned and clear of all debris and left in safe state		1	0	1
	PC33.all reports and documentation are completed correctly to required specifications		3	1	2
	PC34.produce installations which comply with the equipment manufacturer's operation specification/range		4	1	3
	PC35.deal promptly and effectively with problems within control, and seek help and guidance from the relevant people for problems that cannot be resolved		2	0	2
	PC36.complete the relevant paperwork, and pass to the appropriate people		2	0	2
	PC37.give a brief to the customer staff on do's and don'ts of the operation and maintenance of the machine		2	0	2
	PC38.switch on product equipment and carry out check for proper functioning without load		2	0	2
	PC39.make adjustments, appropriate to the equipment being installed		3	0	3
	Total		**100**	**14**	**86**
	PC1.comply with health and safety, environmental and other relevant regulations and guidelines at work		3	1	2
	PC2.adhere to procedures and guidelines for personal protective equipment (PPE)		4	1	3

Assessable Outcome	Assessment Criteria	Total Mark (400)	Out Of	Marks Allocation	
				Theory	Skills Practical
2.CSC/N0502 Commission mechanical equipment after installation at site	and other relevant safety regulations while performing installation operations ensure work area is clean and safe from hazards	100			
	PC3.work following laid down procedures and instructions		3	1	2
	PC4.ensure work area is clean and safe from hazards		2	0	2
	PC5.ensure that all tools, equipment, power tool cables, extension leads are in a safe and usable condition		2	0	2
	PC6.follow all relevant setting up and operating specifications for the products or mechanical equipment being commissioned		3	1	2
	PC7.follow the defined procedures and set up the equipment correctly ensuring that all operating parameters are achieved		3	1	2
	PC8.plan the commissioning activities so as to minimize disruption to normal working		4	1	3
	PC9.ensure that all tools and equipment used are within current calibration dates		2	0	2
	PC10.obtain clearance to carry out the commissioning activities		2	0	2
	PC11.isolate equipment from electricity, gas or fluids during commissioning		3	0	3
	PC12.prepare the work area for the commissioning operations as per procedure or operational specification		4	1	3
	PC13.ensure that the site is accessible, free from obstructions or hazards		2	0	2
	PC14.obtain relevant information required to undertake the commissioning		2	0	2
	PC15.carry out start-up procedures, and confirm that the functioning meets specifications		4	1	3
	PC16.run equipment at the recommended initial settings (eg. reduced power / speed/ flow)		4	1	3
	PC17.check for leaks during operations, make sensory checks (sight, sound, smell, touch)		4	0	4
	PC18.run through the operating sequence, and check for correct functioning		6	2	4
	PC19.load the system incrementally, and make any necessary adjustments to settings to achieve the specification parameters		6	2	4
	PC20.conduct a trial run of the equipment at full power/speed/flow		4	0	4
	PC21.confirm that the final product/process outcomes meet specifications		6	2	4

Assessable Outcome	Assessment Criteria	Total Mark (400)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC22.monitor and record measurements and observations		4	1	3
	PC23.shut down and/or isolate the installed equipment to a safe condition		2	0	2
	PC24.deal with equipment malfunction and rectify faults during the commissioning process as appropriate		4	1	3
	PC25.dismantle mechanical equipment in order to replace defective components (eg. release of pressures/force, proof-marking of components, removal of components by extraction or pressing)		4	0	4
	PC26.re-assemble the removed components, and adjust them to meet the operating specification		6	2	4
	PC27.ensure that the commissioned equipment complies with specified standards		4	2	2
	PC28.complete the machine related documentation like backups, manuals, logs, etc. and hand over to the appropriate people		3	0	3
	Total		**100**	**21**	**79**
3.CSC/N1335 Use basic health and safety practices at the workplace	PC1.use protective clothing/equipment for specific tasks and work conditions	**100**	5	2	3
	PC2.state the name and location of people responsible for health and safety in the workplace		3	1	2
	PC3.state the names and location of documents that refer to health and safety in the workplace		3	1	2
	PC4.identify job-site hazardous work and state possible causes of risk or accident in the workplace		5	2	3
	PC5.carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role		4	2	2
	PC6.state location of general health and safety equipment in the workplace		3	2	1
	PC7.inspect for faults, set up and safely use steps and ladders in general use		5	2	3
	PC8.work safely in and around trenches, elevated places and confined areas		5	2	3
	PC9.lift heavy objects safely using correct procedures		5	2	3
	PC10.apply good housekeeping practices at all times		4	2	2
	PC11.identify common hazard signs displayed in various areas		5	2	3
	PC12.retrieve and/or point out documents that refer to health and safety in the workplace		3	1	2
	PC13.use the various appropriate fire extinguishers on different types of fires correctly		4	1	3
	PC14.demonstrate rescue techniques applied during		4	1	3

Assessable Outcome	Assessment Criteria	Total Mark (400)	Out Of	Marks Allocation	
				Theory	Skills Practical
	fire hazard				
	PC15.demonstrate good housekeeping in order to prevent fire hazards		3	1	2
	PC16.demonstrate the correct use of a fire extinguisher		4	1	3
	PC17.demonstrate how to free a person from electrocution		4	1	3
	PC18.administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.		4	1	3
	PC19.demonstrate basic techniques of bandaging		3	1	2
	PC20.respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		4	1	3
	PC21.perform and organize loss minimization or rescue activity during an accident in real or simulated environments		3	1	2
	PC22.administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		3	1	2
	PC23.demonstrate the artificial respiration and the CPR Process		3	1	2
	PC24.participate in emergency procedures		3	2	1
	PC25.complete a written accident/incident report or dictate a report to another person, and send report to person responsible		4	1	3
	PC26.demonstrate correct method to move injured people and others during an emergency		4	1	3
	Total		**100**	**36**	**64**
4.CSC/N1336 Work effectively with others	PC1.accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	**100**	10	3	7
	PC2.accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	3	7
	PC3.give information to others clearly, at a pace and in a manner that helps them to understand		10	3	7
	PC4.display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible		10	3	7
	PC5.consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	3	7
	PC6.display appropriate communication etiquette while working		10	3	7
	PC7.display active listening skills while interacting with others at work		10	3	7
	PC8.use appropriate tone, pitch and language to		10	3	7

Assessable Outcome	Assessment Criteria	Total Mark (400)	Out Of	Marks Allocation	
				Theory	Skills Practical
	convey politeness, assertiveness, care and professionalism				
	PC9.demonstrate responsible and disciplined behaviors at the workplace		10	3	7
	PC10.escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict		10	3	7
	Total		**100**	**30**	**70**
	Grand Total	**400**	**400**	**101**	**299**
	Percentage Weightage:			**27**	**75**
	Minimum Pass% to qualify (aggregate):			**70**	