

Casting Line In-Charge

QP Code: ASC/Q3207

NSQF Level: 6

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Qualification Pack

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ASC/Q3207: Casting Line In-Charge

Brief Job Description

This role primarily involves supervising the sand and molten metal related casting operations, overseeing the setting up and operating the casting equipments and forming & finishing of the final output.

Personal Attributes

Reading, writing and communication skills, ability to plan and prioritize, quality consciousness, high precision and sensitivity to problem solving, , quick decision making, safety orientation, ability to use internal ERP systems (if existing), managing teams, grievance management, listening skills, ability to train team members.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ASC/N0006: Maintain a safe and healthy working environment](#)
2. [ASC/N0016: Understanding process requirements, ensuring process implementation & suggesting process improvement initiatives](#)
3. [ASC/N0017: Manage the production related operations of the shift/line on a day to day basis](#)
4. [ASC/N0018: Managing the team on the line/shift on a day to day basis](#)
5. [ASC/N0022: Ensure implementation of 5S activities at the shop floor & the office area](#)
6. [ASC/N3223: Manage end to end process related to metal casting process](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Casting
Country	India
NSQF Level	6
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3122.4401

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Minimum Educational Qualification & Experience	Diploma (Production/Foundry Engineering) with 10-15 Years of experience Casting line experience (ITI Background) OR Diploma (Production/Foundry Engineering) with 2-3 years of experience Diploma
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Latest casting techniques available in the market Working of presses and dies 5S and Safety aspects Problem Solving Techniques Quality Management Systems Team Management skills IT and ERP awareness
Minimum Job Entry Age	18 Years
Last Reviewed On	30/11/2013
Next Review Date	31/03/2020
NSQC Approval Date	05/08/2015
Version	1.0

Qualification Pack

ASC/N0006: Maintain a safe and healthy working environment

Description

This NOS is about creating a Safe and Healthy work place, adhering to the safety guidelines in the working area, following practices which are not impacting the environment in a negative manner and training team members on health and safety related issues

Scope

The role holder will be responsible for identifying and reporting of risks creating and sustaining a safe, clean and environment friendly work place This NOS will be applicable to all Automotive sector manufacturing job roles

Elements and Performance Criteria

Identify and report the risks identified

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

- PC1..** Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise
- PC2.** Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc
- PC3.** Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations
- PC4.** Create awareness amongst other by sharing information on the identified risks

Create and sustain a Safe, clean and environment friendly work place

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

- PC5..** Follow the instructions given on the equipment manual describing the operating process of the equipments
- PC6..** Follow the Safety, Health and Environment related practices developed by the organization
- PC7.** Operate the machine using the recommended Personal Protective Equipments (PPE)
- PC8. .** Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc
- PC9.** Maintain high standards of personal hygiene at the work place
- PC10.** Ensure that the waste disposal is done in the designated area and manner as per organization SOP.
- PC11.** Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, procedures and policies related to Health, Safety and Environment followed in the company

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- KU2.** basic knowledge of Safety procedures(fire fighting, first aid) within the organization
- KU3.** knowledge of various types of PPEs and their usage
- KU4.** basic knowledge of risks/hazards associated with each occupation in the organization
- KU5.** how to safely operate various tools and machines and risks associated with the tools/ equipment
- KU6.** knowledge of personal hygiene and how an individual can contribute towards creating a highly safe and clean working environment

Generic Skills (GS)

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

- GS1.** write basic level notes and observations
- GS2.** read safety instructions put up across the plant premises
- GS3.** read safety precautions mentioned in equipment manuals and panels to understand the potential risks associated
- GS4.** effectively communicate information to team members
- GS5.** inform employees in the plant and concerned functions about events, incidents & potential risks observed related to Safety, Health and Environment.
- GS6.** question operator/ supervisor in order to understand the safety related issues
- GS7.** attentively listen with full attention and comprehend the information given by the speaker during safety drills and training programs
- GS8.** use common sense and make judgments during day to day basis
- GS9.** use reasoning skills to identify and resolve basic problems
- GS10.** use common sense and make judgments during day to day basis
- GS11.** use reasoning skills to identify and resolve basic problems

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify and report the risks identified</i>	8	23	-	-
PC1.. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise	3	6	-	-
PC2. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc	2	6	-	-
PC3. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations	2	6	-	-
PC4. Create awareness amongst other by sharing information on the identified risks	1	5	-	-
<i>Create and sustain a Safe, clean and environment friendly work place</i>	17	52	-	-
PC5.. Follow the instructions given on the equipment manual describing the operating process of the equipments	3	7	-	-
PC6.. Follow the Safety, Health and Environment related practices developed by the organization	3	8	-	-
PC7. Operate the machine using the recommended Personal Protective Equipments (PPE)	3	8	-	-
PC8. . Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc	2	8	-	-
PC9. Maintain high standards of personal hygiene at the work place	2	7	-	-
PC10. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.	3	8	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others	1	6	-	-
NOS Total	25	75	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0006
NOS Name	Maintain a safe and healthy working environment
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	15/09/2013
Next Review Date	15/09/2015
NSQC Clearance Date	20/07/2015

Qualification Pack

ASC/N0016: Understanding process requirements, ensuring process implementation & suggesting process improvement initiatives

Description

This NOS unit is about understanding for the required processes, drafting first level process manuals, ensuring implementation of processes and providing inputs for process improvement through deploying different tools/ participating in problem analysis

Scope

The role will be responsible for understanding the required processes and ensuring implementation first level design of process improvement initiatives implementation of initiatives on the shop floor The job holder will cover all types of manufacturing processes in the automobile industry. The role holder will interact with the different manufacturing process teams, maintenance team, material management team, industrial engineering team, Quality Control & Assurance team, Safety team and HR/IR team

Elements and Performance Criteria

Understanding all the requisite processes in detail and ensuring implementation

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

- PC1.** . display detailed understanding of all the requisite processes to be adopted for completing the work order through reading the process manuals/ work instructions/standard operating procedures for the production job
- PC2..** ensure first level drafting of process manuals, work instructions, control plans, process flow charts to enable the team to easily understand and implement the process
- PC3. .** ensure proper display of work instructions, control plans and flow charts at the correct places on the shop floor to enable timely and proper view of the documents
- PC4. .** share knowledge of processes , inputs and outputs with the operators and in order to enhance their skill levels
- PC5..** maintain work flow by monitoring steps of the processes, setting variables, observing control points and equipment
- PC6. .** monitor various process parameters on a regular basis and ensure compliance to agreed standards (e.g. ambient air quality, stack monitoring, water quality monitoring etc.)
- PC7. .** ensuring recording and reporting procedures and systems are in place
- PC8. .** facilitating corrections to malfunctions within process control points
- PC9. .** ensure that all the tools and measuring instruments used on the shop floor are inspected, tested and calibrated internally/ externally as per the schedule
- PC10. .** support the shop head/ process head in arranging for the requisite usage certificates for the tools and equipment as per the internal guidelines of the organization
- PC11..** ensure 5s implementation in the production line by analysing possible areas of systems and process improvements and ensure implementation of the recommended measures to address the gaps
- PC12..** ensure successful implementation of the completed poka yoke and kaizen on the running line

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PC13.. support the shop head/ process manager in conducting first level audit of the manufacturing process on the shop floor

Process Improvement

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

- PC14.** . ensure optimum resource utilization and wastage reduction through process improvements, kaizens, TQM, Poka Yoke etc. in the shift
- PC15.** . provide inputs for analysis of breakdown trends and current maintenance process to identify areas for improvement to achieve cost savings and reduce breakdown timing
- PC16..** identify areas of improvement in the existing processes/systems and take measures to adhere to the identified kaizen/ process improvement initiatives
- PC17.** . ensure inputs from the line operators are considered while designing for various poka yoke , kaizen initiatives
- PC18.** . encourage team members/ supervisor/ operators to suggest quality improvement measures through suggestion schemes, evaluate feasibility of the ideas and discuss their implementation with seniors
- PC19..** support in analysing internal & external rejection data, planning and ensuring implementation of the corrective measures
- PC20.** . ensure team has understanding of basic analytical tools like why why analysis, 7 QC tools, TQM principles to analyse various problems and design process improvement activities
- PC21.** . support the process engineering/ industrial engineering team in modifications of the process flow, process/ plant layout to improve the process TAT, operational ergonomics, work quality etc.

Implementation of various initiatives

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

- PC22..** take overall responsibility to ensure adherence to safety standards by all employees and establish zero accident practice in the section
- PC23..** implement various business excellence techniques like kaizen, 5s initiatives, etc. to enhance productivity for the plant/ shift

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant manufacturing standards and procedures followed in the company in detail
- KU2.** different types of products manufactured by the company
- KU3.** knowledge of functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution
- KU4.** quality norms and standards prescribed in the Quality Manual by the organization for painting
- KU5.** 5S and Safety norms practiced in the organization
- KU6.** different types of manufacturing processes used
- KU7.** requirement of raw materials used in the process
- KU8.** about tools, jigs and fixtures , their usage and maintenance methods
- KU9.** how to operate the machine in both, automatic and manual mode

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- KU10.** basic understanding of robotics, CNC operations, data acquisitions systems, automatic recording instruments
- KU11.** using engineering drawings, sketches, control plan and work instructions in the plant
- KU12.** usage of various measurement tools like Vernier Calipers, Micrometres, rulers, scales, weighing machines etc
- KU13.** basic arithmetic and calculation methods
- KU14.** how to handle electrical equipment and circuits, rectifiers and control panel etc.
- KU15.** different types of defects which may arise due to improper manufacturing and the impact of the defect on product performance
- KU16.** metallurgical and chemical properties of material involved
- KU17.** how to measure the correct specifications of the output in the terms of thickness, hardness, durability, tightness, finesse etc.
- KU18.** . various problems solving tools like 7QC, Why Why Analysis, Brain storming etc.
- KU19.** key areas of power consumption/ steam consumption, compressed air consumption etc
- KU20.** various data entry tools and formats used in the organization
- KU21.** ability to visualize the final product output and hence decide on the key steps and parameters to be followed
- KU22.** usage of various business correspondence tools like Email, MS Office tools (Word, Excel, Power Point) etc.
- KU23.** about the various hazards related to various chemicals if used in the processes, the hazards involved in the process operations and usage of PPEs

Generic Skills (GS)

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

- GS1.** create first level process manuals, Control Plans, Work Instructions in a manner that the operators can easily understand the process requirements and process steps
- GS2.** create small notes/ work documents/ diagrams for supervisors, operators and helpers to help them understand the process
- GS3.** use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc.
- GS4.** read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better
- GS5.** discuss task lists, schedules, and work-loads with the operative team members
- GS6.** effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements
- GS7.** answer the queries raised by the operative team as well as intercompany departments
- GS8.** effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc.
- GS9.** attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
- GS10.** communicate effectively to the team members
- GS11.** identify conflicts in the team and try to resolve them at the earliest

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- GS12.** interact and engage with the team members on a day to day basis
- GS13.** counsel and coach the operators and help them resolve issues
- GS14.** timely highlight to the management about any good work/ achievement by the operators and helper
- GS15.** break the problem into smaller issues and tasks to arrive at a solution
- GS16.** understand inter process relationship and establish relationship between various parts of the problem
- GS17.** leverage experience to find effective solutions to problems
- GS18.** use basic analytical tools to arrive at solutions
- GS19.** plan, organize and prioritize the work order and jobs received from the production manager
- GS20.** manage the schedule plan for the operators and helpers on the line/shift
- GS21.** validate all process/ equipment manuals so that the final process selected is correct
- GS22.** organize information, tools, manuals etc. on the shop floor so that sorting becomes easy
- GS23.** reorganize resources on the line/ shift in case of change of plans
- GS24.** use common sense and make judgments during day to day basis
- GS25.** use reasoning skills to identify and resolve problems
- GS26.** use intuition to detect any potential problems which could arise during operations
- GS27.** critically analyse solutions/ recommendations shared by operatives and supervisors for implementation
- GS28.** accept additional responsibility for self and the team
- GS29.** encourage self and other to take greater responsibilities
- GS30.** ensure that the work allocated to the team is completed as per timelines and quality norms
- GS31.** identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
- GS32.** motivate and provide support for the team on the shop floor
- GS33.** encourage collaboration between team members
- GS34.** resolve team issues and grievances to manage conflicts within the team
- GS35.** create an environment of approachability, trust and openness within the team
- GS36.** ensure role clarity for all operators and helpers on the line/ shift
- GS37.** escalate any team related issues to the concerned person at the right time
- GS38.** identify defective parts in the manufacturing line by comparing manufactured pieces with the work standard
- GS39.** link the defect observed with the overall impact on the performance of the component/ automobile
- GS40.** support and contribute in monitoring and delivering high quality output from self and others
- GS41.** train team members on maintaining quality standards set by the organization
- GS42.** use previous experience in resolving problems and taking decisions
- GS43.** make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization
- GS44.** familiarise with leading practices available in the market
- GS45.** think independently on new approaches to manufacturing process, material management, data management and team management

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- GS46.** represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Understanding all the requisite processes in detail and ensuring implementation</i>	18	43	-	-
PC1. . display detailed understanding of all the requisite processes to be adopted for completing the work order through reading the process manuals/ work instructions/standard operating procedures for the production job	2	3	-	-
PC2.. ensure first level drafting of process manuals, work instructions, control plans, process flow charts to enable the team to easily understand and implement the process	2	3	-	-
PC3. . ensure proper display of work instructions, control plans and flow charts at the correct places on the shop floor to enable timely and proper view of the documents	1	3	-	-
PC4. . share knowledge of processes , inputs and outputs with the operators and in order to enhance their skill levels	2	3	-	-
PC5.. maintain work flow by monitoring steps of the processes, setting variables, observing control points and equipment	2	4	-	-
PC6. . monitor various process parameters on a regular basis and ensure compliance to agreed standards (e.g. ambient air quality, stack monitoring, water quality monitoring etc.)	2	4	-	-
PC7. . ensuring recording and reporting procedures and systems are in place	1	3	-	-
PC8. . facilitating corrections to malfunctions within process control points	1	4	-	-
PC9. . ensure that all the tools and measuring instruments used on the shop floor are inspected, tested and calibrated internally/ externally as per the schedule	1	4	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. . support the shop head/ process head in arranging for the requisite usage certificates for the tools and equipment as per the internal guidelines of the organization	1	3	-	-
PC11.. ensure 5s implementation in the production line by analysing possible areas of systems and process improvements and ensure implementation of the recommended measures to address the gaps	1	3	-	-
PC12.. ensure successful implementation of the completed poka yoke and kaizen on the running line	1	3	-	-
PC13.. support the shop head/ process manager in conducting first level audit of the manufacturing process on the shop floor	1	3	-	-
<i>Process Improvement</i>	10	21	-	-
PC14. . ensure optimum resource utilization and wastage reduction through process improvements, kaizens, TQM, Poka Yoke etc. in the shift	1	3	-	-
PC15. . provide inputs for analysis of breakdown trends and current maintenance process to identify areas for improvement to achieve cost savings and reduce breakdown timing	2	3	-	-
PC16.. identify areas of improvement in the existing processes/systems and take measures to adhere to the identified kaizen/ process improvement initiatives	1	3	-	-
PC17. . ensure inputs from the line operators are considered while designing for various poka yoke , kaizen initiatives	1	2	-	-
PC18. . encourage team members/ supervisor/ operators to suggest quality improvement measures through suggestion schemes, evaluate feasibility of the ideas and discuss their implementation with seniors	1	2	-	-
PC19.. support in analysing internal & external rejection data, planning and ensuring implementation of the corrective measures	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC20. . ensure team has understanding of basic analytical tools like why why analysis, 7 QC tools, TQM principles to analyse various problems and design process improvement activities	2	3	-	-
PC21. . support the process engineering/ industrial engineering team in modifications of the process flow, process/ plant layout to improve the process TAT, operational ergonomics, work quality etc.	1	2	-	-
<i>Implementation of various initiatives</i>	2	6	-	-
PC22.. take overall responsibility to ensure adherence to safety standards by all employees and establish zero accident practice in the section	1	3	-	-
PC23.. implement various business excellence techniques like kaizen, 5s initiatives, etc. to enhance productivity for the plant/ shift	1	3	-	-
NOS Total	30	70	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0016
NOS Name	Understanding process requirements, ensuring process implementation & suggesting process improvement initiatives
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	6
Credits	TBD
Version	1.0
Last Reviewed Date	28/12/2013
Next Review Date	28/12/2015
NSQC Clearance Date	

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ASC/N0017: Manage the production related operations of the shift/line on a day to day basis

Description

This NOS is about ensuring Operational Productivity

Scope

The role will be responsible for managing operations in the shift/ Process manpower and material management in the shift/ process ensure conformance to quality parameters and norms analyse data on production, maintenance, quality, manpower deployment etc. The job holder will cover all types of manufacturing processes in the automobile industry. The role holder will interact with the different manufacturing process teams, maintenance team, material management team, industrial engineering team, Quality Control & Assurance team, Safety team and HR/IR team

Elements and Performance Criteria

Manpower Management

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

- PC1..** undertake effective shift planning based on manpower allocation and shift handling of place right manpower on the right workstation in coordination with production in-charge to achieve production targets
- PC2..** support the shop head/ process head in finalizing the shift rosters for the week and month based on the production plan available

Material Management

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

- PC3..** send inventory requirements to stores and purchase department and follow up with stores and purchase to ensure timely receipt of material (spares, consumables)
- PC4..** ensure that the incoming raw material quality is inspected and meets the production requirement
- PC5. .** ensure that the material and work piece movement on the shop floor conforms to the TAT time prescribed in the SOP/ work plans so that production targets are met for the line/ shift

Supervise Production Operations

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

- PC6. .** ensure that the production plan shared by the ppc team is fulfilled during the shift/ across lines
- PC7. .** coordinate with various functions like material management, stores, paint shop, assembly line, quality, safety, production planning etc. to ensure communication of required information and resolution of queries
- PC8..** responsible for end of line inspection under supervision
- PC9..** ensure that the operators and helpers have the required tools and equipment at the start of the process
- PC10..** identify & implement action steps to reduce losses and wastages during shift operation and ensure minimum rejection of components

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- PC11.** observe and note the consumption of energy, fuel, steam on the production line and utilize these inputs for optimization of various factors of production
- PC12.** support the maintenance team in finalizing the preventive maintenance schedule for the shop
- PC13.** ensure that the operator and helper are using the required personal protective equipment like goggles, masks, gloves and other ppes at the time of conducting the painting operation

Conformance to Product and Process Quality

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

- PC14.** conduct random incoming quality inspection of material and provide the relevant feedback on the same to the store
- PC15.** conduct quality inspection of the process parameters, lab parameters and wip products and provide necessary feedback to the line leaders
- PC16.** conduct quality inspection of the first sample/batch to ensure that the quality of the product produced meet customer requirements
- PC17.** conduct inspection and analysis of the defects observed in the process and products

Data Collation and Analysis

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

- PC18.** prepare daily and monthly production mis reports to match actual performance vis--vis the targets and report the same to production in-chart
- PC19.** verify the production and material movement related data entries in the system (manual/ erp) for the shift and ensure correctness of the data
- PC20.** ensure compilation of data of breakdown maintenance and reporting the same to the maintenance team
- PC21.** collaborate with the maintenance team in conducting detailed breakdown analysis to understand problems, look out for process/ machine modifications and resolve the issues
- PC22.** conduct random sampling of the process parameters, finished goods and WIP products and provide necessary feedback to the line leaders
- PC23.** collaborate with the quality management and inspection team in conducting detailed analysis to resolve issues
- PC24.** collaborate with various supervisors to capture process data points as mentioned in the internal operating guidelines for data analytics
- PC25.** support the shop head/ process head in analysing the various data points related to production, maintenance, manpower deployment, material management, costs etc.
- PC26.** support the shop head/ process head in creating various analytical presentations required for process/ shop/ plant review

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant manufacturing standards and procedures followed in the company in detail
- KU2.** different types of products manufactured by the company
- KU3.** knowledge of functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution

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- KU4.** quality norms and standards prescribed in the Quality Manual by the organization for painting
- KU5.** 5S and Safety norms practiced in the organization
- KU6.** different types of manufacturing processes
- KU7.** requirement of raw materials used in the process
- KU8.** about tools, jigs and fixtures , their usage and maintenance
- KU9.** how to operate both in automatic and manual mode
- KU10.** basic understanding of robotics, CNC operations, data acquisitions systems, automatic recording instruments
- KU11.** different types of defects which may arise due to improper manufacturing
- KU12.** basic Arithmetic and calculation methods
- KU13.** ability to visualize the final product output and hence decide on the key steps to be followe
- KU14.** about handling of electrical equipment and circuits, rectifiers and control panel etc
- KU15.** metallurgical and chemical properties of the material under usage
- KU16.** how to measure the correct specifications of the output in the terms of thickness, hardness, durability, tightness etc
- KU17.** how to visualize the final product output and hence decide on the parameters of temperature, pressure, current and voltage
- KU18.** various problems solving tools like 7QC, Why Why Analysis, Brain storming
- KU19.** usage of various business correspondence tools like Email, MS Office tools (Word, Excel, Power Point) etc.
- KU20.** about the various hazards related to various chemicals if used in the processes, the hazards involved in the process operations and usage of PPEs

Generic Skills (GS)

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

- GS1.** create first level process manuals, Control Plans, Work Instructions in a manner that the operators can easily understand the process requirements and process steps
- GS2.** create small notes/ work documents/ diagrams for supervisors ,operators and helpers to help them understand the process
- GS3.** use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc.
- GS4.** read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better
- GS5.** discuss task lists, schedules, and work-loads with the operative team members
- GS6.** effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements
- GS7.** answer the queries raised by the operative team as well as intercompany departments
- GS8.** effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc.
- GS9.** attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker

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- GS10.** communicate effectively to the team members
- GS11.** identify conflicts in the team and try to resolve them at the earliest
- GS12.** interact and engage with the team members on a day to day basis
- GS13.** counsel and coach the operators and help them resolve issues
- GS14.** timely highlight to the management about any good work/ achievement by the operators and helpers
- GS15.** identify problems occurring on the shop floor
- GS16.** break the problem into smaller issues and tasks to arrive at a solution
- GS17.** understand inter process relationship and establish relationship between various parts of the problem
- GS18.** leverage experience and technical expertise to find effective solutions to problems
- GS19.** use basic analytical tools to arrive at solutions
- GS20.** collaborate with cross functional teams to resolve problems
- GS21.** plan, organize and prioritize the work order and jobs received from the production manager
- GS22.** manage the schedule plan for the operators and helpers on the line/shift
- GS23.** validate all process/ equipment manuals so that the final process selected is correct
- GS24.** organize information, tools, manuals etc. on the shop floor so that sorting becomes easy
- GS25.** reorganize resources on the line/ shift in case of change of plans
- GS26.** use common sense and make judgments during day to day basis
- GS27.** use reasoning skills to identify and resolve problems
- GS28.** use intuition to detect any potential problems which could arise during operations
- GS29.** critically analyse solutions/ recommendations shared by operatives and supervisors for implementation
- GS30.** accept additional responsibility for self and the team
- GS31.** encourage self and other to take greater responsibilities
- GS32.** ensure that the work allocated to the team is completed as per timelines and quality norms
- GS33.** identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
- GS34.** motivate and provide support for the team on the shop floor
- GS35.** encourage collaboration between team members
- GS36.** resolve team issues and grievances to manage conflicts within the team
- GS37.** create an environment of approachability, trust and openness within the team
- GS38.** ensure role clarity for all operators and helpers on the line/ shift
- GS39.** escalate any team related issues to the concerned person at the right time
- GS40.** identify defective parts in the manufacturing line by comparing
- GS41.** manufactured pieces with the work standard
- GS42.** link the defect observed with the overall impact on the performance of the component/ automobile
- GS43.** support and contribute in monitoring and delivering high quality output from self and others
- GS44.** train team members on maintaining quality standards set by the organization
- GS45.** use previous experience in resolving problems and taking decisions

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- GS46.** make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization
- GS47.** familiarise with leading practices available in the market
- GS48.** think independently on new approaches to manufacturing process, material management, data management and team management
- GS49.** represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Manpower Management</i>	2	4	-	-
PC1.. undertake effective shift planning based on manpower allocation and shift handling of place right manpower on the right workstation in coordination with production in-charge to achieve production targets	1	2	-	-
PC2.. support the shop head/ process head in finalizing the shift rosters for the week and month based on the production plan available	1	2	-	-
<i>Material Management</i>	3	8	-	-
PC3.. send inventory requirements to stores and purchase department and follow up with stores and purchase to ensure timely receipt of material (spares, consumables)	1	2	-	-
PC4.. ensure that the incoming raw material quality is inspected and meets the production requirement	1	3	-	-
PC5. . ensure that the material and work piece movement on the shop floor conforms to the TAT time prescribed in the SOP/ work plans so that production targets are met for the line/ shift	1	3	-	-
<i>Supervise Production Operations</i>	10	24	-	-
PC6. . ensure that the production plan shared by the ppc team is fulfilled during the shift/ across lines	1	3	-	-
PC7. . coordinate with various functions like material management, stores, paint shop, assembly line, quality, safety, production planning etc. to ensure communication of required information and resolution of queries	1	3	-	-
PC8.. responsible for end of line inspection under supervision	1	3	-	-
PC9.. ensure that the operators and helpers have the required tools and equipment at the start of the process	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10.. identify & implement action steps to reduce losses and wastages during shift operation and ensure minimum rejection of components	2	3	-	-
PC11. . observe and note the consumption of energy, fuel, steam on the production line and utilize these inputs for optimization of various factors of production	2	3	-	-
PC12. . support the maintenance team in finalizing the preventive maintenance schedule for the shop	1	3	-	-
PC13.. ensure that the operator and helper are using the required personal protective equipment like goggles, masks, gloves and other ppes at the time of conducting the painting operation	1	3	-	-
<i>Conformance to Product and Process Quality</i>	6	12	-	-
PC14.. conduct random incoming quality inspection of material and provide the relevant feedback on the same to the store	2	3	-	-
PC15.. conduct quality inspection of the process parameters, lab parameters and wip products and provide necessary feedback to the line leaders	2	3	-	-
PC16.. conduct quality inspection of the first sample/batch to ensure that the quality of the product produced meet customer requirements	1	3	-	-
PC17.. conduct inspection and analysis of the defects observed in the process and products	1	3	-	-
<i>Data Collation and Analysis</i>	9	22	-	-
PC18.. prepare daily and monthly production mis reports to match actual performance vis--vis the targets and report the same to production in-chart	1	3	-	-
PC19.. verify the production and material movement related data entries in the system (manual/ erp) for the shift and ensure correctness of the data	1	3	-	-
PC20.. ensure compilation of data of breakdown maintenance and reporting the same to the maintenance team	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21.. collaborate with the maintenance team in conducting detailed breakdown analysis to understand problems, look out for process/ machine modifications and resolve the issues	1	2	-	-
PC22.. conduct random sampling of the process parameters, finished goods and WIP products and provide necessary feedback to the line leaders	1	3	-	-
PC23.. collaborate with the quality management and inspection team in conducting detailed analysis to resolve issues	1	2	-	-
PC24.. collaborate with various supervisors to capture process data points as mentioned in the internal operating guidelines for data analytics	1	2	-	-
PC25.. support the shop head/ process head in analysing the various data points related to production, maintenance, manpower deployment, material management, costs etc.	1	2	-	-
PC26.. support the shop head/ process head in creating various analytical presentations required for process/ shop/ plant review	1	2	-	-
NOS Total	30	70	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0017
NOS Name	Manage the production related operations of the shift/line on a day to day basis
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	6
Credits	TBD
Version	1.0
Last Reviewed Date	28/12/2013
Next Review Date	28/12/2015
NSQC Clearance Date	

Qualification Pack

ASC/N0018: Managing the team on the line/shift on a day to day basis

Description

This NOS unit is about managing the team of operatives and helpers on day to day basis, ensuring their shift deployment, motivating them by involving them in various engagement initiatives at the shop floor, helping them improve the skills levels and managing their grievances in the best possible manner in order to maximize the people productivity at the shop floor

Scope

The role will be responsible for engaging the workforce through employee engagement and communication finalizing manpower deployment measuring operator performance, sharing feedback and training of helpers and operators managing grievances of the team members The job holder will cover all types of manufacturing processes in the automobile industry. The role holder will interact with the different manufacturing process teams, maintenance team, material management team, industrial engineering team, Quality Control & Assurance team, Safety team and HR/IR team

Elements and Performance Criteria

Engaging the shop floor work force through employee communication and employee engagement

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

- PC1.** . ensure operators and helpers on the production line/ shift are aware of the job expectations on a daily basis
- PC2.** . ensure that the operators are aware of the production targets and the timelines required to process a work order as finalized in the production plan
- PC3..** involve operators and helpers for the daily floor meeting/ morning meetings/ staff meetings to communicate information intended for them
- PC4.** . ensure communication to line operators/ helpers on any changes in policies/ processes by the organization through required verbal/ written mechanisms
- PC5.** . ensure participation of employees in various engagement initiatives organized at the plant and other place by the organization
- PC6.** . involve operators and helpers in Quality Circles, TQM & kaizen meets, brainstorming sessions, safety drills etc. to increase their involvement in manufacturing operations
- PC7.** . ensure availability of tea, snacks, drinking water and basic hygiene facilities at the shop floor for the operative workforce.
- PC8..** escalate issues to concerned staff in case of any issue related to operative deployment and engagement
- PC9.** . ensure employees at the shop floor are motivated and their concerns are resolved

Finalizing manpower deployment

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

- PC10.** . finalize along with the process manager, the shift planning and manpower deployment for the shift/ line as per the proposed production plan

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- PC11.** . support the process manager in creating week wise shift rosters for the shift/ line manpower and ensure rotation of manpower as per the organizational norms and guidelines
- PC12.** . maintain the information on leaves/ IN Out time keeping and shift/ line overtime for the operatives and helpers and share the information with the concerned as and when required
- PC13..** identify skilled manpower for the process and ensure periodic up - dation of Skill Matrix/ skill chart for the shift/ line/ process area
- PC14..** ensure identification and deployment of right skilled people at the right places on the line/ process area

Employee Performance Measurement and Employee Development

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

- PC15.** . ensure that all the operative manpower is aware of the production targets, production plan and daily productivity targets
- PC16.** . track the daily performance of the operators and helpers during the shift and note the achievement levels in a manual register/ online it enabled system
- PC17..** provide feedback to the operators and helper in case of any process deviation observed
- PC18..** provide feedback to managers pertaining to performance appraisals of operators and helpers
- PC19..** ensure that the operatives are trained and are aware of the processes which need to be followed on the shop floor during the production process
- PC20.** . support the manager and the training team in training of entry level operators and helpers in the plant
- PC21.** . share knowledge of processes , inputs and outputs with the operators to enhance their skill levels
- PC22.** . other than technical trainings, support the team by delivering trainings related to quality and safety for the operators and helpers
- PC23.** . drive a culture of creativity and innovation in the team by given the team members opportunity to think out of box and express their thoughts

Grievance Management for Operators and Helpers

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

- PC24.** . in case the operating staff has any queries, ensure that the queries are resolved either by self or escalated to the concerned person
- PC25.** . listen to issues related to workmen problems/ work men grievances/ complaints/ personal problems etc. for the operators and helpers
- PC26..** resolve issues which are under the purview of the supervisor and escalate the ones which need higher intervention to the concerned team

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant HR Policies and Processes followed by the organization
- KU2.** different types of products manufactured by the company
- KU3.** knowledge of functional processes like Procurement, Store management, inventory management, quality management and key contact points for query resolution

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- KU4.** 5S and Safety norms practiced in the organization
- KU5.** different types of manufacturing processes
- KU6.** various grievance management tools available in the organization
- KU7.** various problems solving tools like 7QC, Why Why Analysis, Brain storming
- KU8.** different types of communication channels practiced by the organization
- KU9.** the method of noting observations, maintaining records and sharing them with the concerned in the required format
- KU10.** knowledge of shift roster norms and guidelines
- KU11.** how and when to measure performance of the operators
- KU12.** how to share feedback with team members

Generic Skills (GS)

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

- GS1.** document information from the manuals, discussion notes, process charts etc.
- GS2.** create small notes/ work documents/ diagrams for operators and helpers to help them understand the process
- GS3.** use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc
- GS4.** read internal information memos send by internal customers (other functions within the organization)
- GS5.** discuss task lists, schedules, and work-loads with the operative team members
- GS6.** answer the queries raised by the operative team as well as intercompany departments
- GS7.** effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc.
- GS8.** attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
- GS9.** identify the strengths and weaknesses of the subordinate team members (operators and helpers)
- GS10.** provide constructive and genuine feedback
- GS11.** motivate the team to take independently responsibilities in their work areas
- GS12.** provide training to the operators and helpers for technical and behavioural areas
- GS13.** communicate effectively to the team members
- GS14.** identify conflicts in the team and try to resolve them at the earliest
- GS15.** interact and engage with the team members on a day to day basis
- GS16.** counsel and coach the operators and help them resolve issues
- GS17.** timely highlight to the management about any good work/ achievement by the operators and helpers
- GS18.** display empathy for the problems faced by the team and act on the concerns
- GS19.** break the problem into smaller issues and tasks to arrive at a solution
- GS20.** understand inter process relationship and establish relationship between various parts of the problem

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- GS21.** leverage experience to find effective solutions to problems
- GS22.** use basic analytical tools to arrive at solutions
- GS23.** collaborate with cross functional teams to resolve problems
- GS24.** use common sense and make judgments during day to day basis
- GS25.** use reasoning skills to identify and resolve problems
- GS26.** use intuition to detect any potential problems which could arise during operations
- GS27.** critically analyse solutions/ recommendations shared by operatives and supervisors for implementation
- GS28.** accept additional responsibility for self and the team
- GS29.** encourage self and other to take greater responsibilities
- GS30.** ensure that the work allocated to the team is completed as per timelines and quality norms
- GS31.** identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
- GS32.** motivate and provide support for the team on the shop floor
- GS33.** encourage collaboration between team members
- GS34.** resolve team issues and grievances to manage conflicts within the team
- GS35.** create an environment of approachability, trust and openness within the team
- GS36.** ensure role clarity for all operators and helpers on the line/ shift
- GS37.** escalate any team related issues to the concerned person at the right time
- GS38.** use previous experience in resolving problems and taking decisions
- GS39.** make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Engaging the shop floor work force through employee communication and employee engagement</i>	13	25	-	-
PC1. . ensure operators and helpers on the production line/ shift are aware of the job expectations on a daily basis	2	3	-	-
PC2. . ensure that the operators are aware of the production targets and the timelines required to process a work order as finalized in the production plan	2	3	-	-
PC3. .. involve operators and helpers for the daily floor meeting/ morning meetings/ staff meetings to communicate information intended for them	1	2	-	-
PC4. . ensure communication to line operators/ helpers on any changes in policies/ processes by the organization through required verbal/ written mechanisms	1	3	-	-
PC5. . ensure participation of employees in various engagement initiatives organized at the plant and other place by the organization	1	2	-	-
PC6. . involve operators and helpers in Quality Circles, TQM & kaizen meets, brainstorming sessions, safety drills etc. to increase their involvement in manufacturing operations	2	3	-	-
PC7. . ensure availability of tea, snacks, drinking water and basic hygiene facilities at the shop floor for the operative workforce.	1	3	-	-
PC8. .. escalate issues to concerned staff in case of any issue related to operative deployment and engagement	1	3	-	-
PC9. . ensure employees at the shop floor are motivated and their concerns are resolved	2	3	-	-
<i>Finalizing manpower deployment</i>	5	15	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. . finalize along with the process manager, the shift planning and manpower deployment for the shift/ line as per the proposed production plan	1	3	-	-
PC11. . support the process manager in creating week wise shift rosters for the shift/ line manpower and ensure rotation of manpower as per the organizational norms and guidelines	1	3	-	-
PC12. . maintain the information on leaves/ IN Out time keeping and shift/ line overtime for the operatives and helpers and share the information with the concerned as and when required	1	3	-	-
PC13.. identify skilled manpower for the process and ensure periodic up - dation of Skill Matrix/ skill chart for the shift/ line/ process area	1	3	-	-
PC14.. ensure identification and deployment of right skilled people at the right places on the line/ process area	1	3	-	-
<i>Employee Performance Measurement and Employee Development</i>	9	23	-	-
PC15. . ensure that all the operative manpower is aware of the production targets, production plan and daily productivity targets	1	3	-	-
PC16. . track the daily performance of the operators and helpers during the shift and note the achievement levels in a manual register/ online it enabled system	1	3	-	-
PC17.. provide feedback to the operators and helper in case of any process deviation observed	1	3	-	-
PC18.. provide feedback to managers pertaining to performance appraisals of operators and helpers	1	3	-	-
PC19.. ensure that the operatives are trained and are aware of the processes which need to be followed on the shop floor during the production process	1	2	-	-
PC20. . support the manager and the training team in training of entry level operators and helpers in the plant	1	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. . share knowledge of processes , inputs and outputs with the operators to enhance their skill levels	1	2	-	-
PC22. . other than technical trainings, support the team by delivering trainings related to quality and safety for the operators and helpers	1	2	-	-
PC23. . drive a culture of creativity and innovation in the team by given the team members opportunity to think out of box and express their thoughts	1	3	-	-
<i>Grievance Management for Operators and Helpers</i>	3	7	-	-
PC24. . in case the operating staff has any queries, ensure that the queries are resolved either by self or escalated to the concerned person	1	2	-	-
PC25. . listen to issues related to workmen problems/ work men grievances/ complaints/ personal problems etc. for the operators and helpers	1	3	-	-
PC26.. resolve issues which are under the purview of the supervisor and escalate the ones which need higher intervention to the concerned team	1	2	-	-
NOS Total	30	70	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0018
NOS Name	Managing the team on the line/shift on a day to day basis
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Welding
NSQF Level	6
Credits	TBD
Version	1.0
Last Reviewed Date	28/12/2013
Next Review Date	28/12/2015
NSQC Clearance Date	

Qualification Pack

ASC/N0022: Ensure implementation of 5S activities at the shop floor & the office area

Description

This NOS is about overseeing the implementation of all 5 S activities both at the shop floor and the office area by the team members and training the team in implementation of the 5S principles

Scope

The individual needs to Ensure sorting, streamlining/ organizing, storage and documentation, systematic cleaning, standardization and sustenance across the plant and office premises of the organization as given in the organization guidelines

Elements and Performance Criteria

Ensure proper sorting of items at the work place

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

- PC1..** ensure all recyclable materials are put in designated containers
- PC2.** ensure no tools, fixtures & jigs are lying on workstations unless in use and no un-necessary items is lying on workbenches or work surfaces unless in use
- PC3.** ensure that the operators and other team members are segregating the waste in hazardous/ non hazardous waste as per the sorting work instructions
- PC4.** ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins
- PC5..** segregate the items which are labelled at red tag items for the process area and keep them in the correct places
- PC6..** ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions
- PC7.** check for return of any type of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area
- PC8. .** oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material
- PC9.** ensure that areas of material storage areas are not overflowing
- PC10.** ensure proper stacking and storage of the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required

Ensure proper documentation and storage - streamlining & organizing the workplace

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

- PC11.** ensure that the team follows the given instructions and checks for labelling of fluids, oils lubricants, solvents, chemicals etc and proper storage of the same to avoid spillage, leakage, fire etc
- PC12.** make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions

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- PC13.** ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .

Ensure cleaning of self and the work place

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

- PC14.** ensure that the area has floors swept, machinery clean and is generally neat and tidy in case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards
- PC15..** ensure workbenches and work surfaces are clean and in good condition
- PC16..** ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination
- PC17..** ensure all recyclable materials are put in designated containers

Ensure standardization

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

- PC18.** ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant
- PC19..** ensure all recyclable materials are put in designated containers
- PC20. .** ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes
- PC21.** ensure timely creation and sharing of the 5s checklists
- PC22.** ensure that the 5s manual are available as per the timelines

Ensure sustenance

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

- PC23.** ensure team cooperation during the audit of 5 s activities
- PC24.** ensure that workmen are periodically trained to address challenges related to 5s
- PC25..** participate actively in employee work groups on 5s and encourage team members for active participation
- PC26..** oversee that the staff/operators are trained and fully understand 5s procedures
- PC27. .** ensure that all the guidelines for what to do and what not to do to build sustainability in 5s are mentioned in the 5s check lists/ work instructions and are easily searchable
- PC28.** ensure continuous training of the team members on 5s in order to increase their awareness and support implementation
- PC29.** ensure that all visual controls, notice boards, symbols etc at the manufacturing place are created, working and are put up as per the requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, procedures and policies related to 5S followed in the company
- KU2.** have basic knowledge of 5S procedures
- KU3.** know various types 5s practices followed in various areas
- KU4.** understand the 5S checklists provided in the department/ team
- KU5.** have skills to identify useful & non useful items

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- KU6.** have knowledge of labels , signs & colours used as indicators
- KU7.** Have knowledge on how to sort and store various types of tools,equipment, material etc
- KU8.** know , how to identify various types of waste products
- KU9.** understand the impact of waste/ dirt/ dust/unwantedsubstances on the process/ environment/ machinery/ humanbody
- KU10.** have knowledge of best and environment protective ways ofcleaning & waste disposal
- KU11.** understand the importance of standardization in processes
- KU12.** understand the importance of sustainability in 5S
- KU13.** have knowledge of TQM process
- KU14.** have knowledge of various materials and storage norms
- KU15.** understand visual controls, symbols, graphs etc

Generic Skills (GS)

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

- GS1.** write basic level notes and observations
- GS2.** note down observations (if any) related to the process
- GS3.** write information documents to internal departments/ internal teams
- GS4.** read 5S instructions put up across the plant premises
- GS5.** effectively communicate information to team members inform employees in the plant and concerned functions about 5S
- GS6.** question the process head in order to understand the 5S related issues
- GS7.** attentively listen with full attention and comprehend the information given by the speaker during 5S training programs
- GS8.** use common sense and make judgments during day to day basis
- GS9.** use reasoning skills to identify and resolve basic problems using 5S
- GS10.** persuade team members to follow 5 S
- GS11.** ensure that the team members understand the importance of using 5 S tool
- GS12.** use innovative skills to perform and manage 5 S activities at the work desk and the shop floor
- GS13.** exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work emerge, techniques in CA/CI around 5 S work practices
- GS14.** do what is right, not what is a popular practice
- GS15.** follow shop floor rules& regulations and avoid deviations
- GS16.** lead by example in the plant premises while performing activities related to 5S
- GS17.** ensure self-cleanliness on a daily basis
- GS18.** demonstrate the will to keep the work area in a clean and orderly manner
- GS19.** accept additional responsibility for self and the team
- GS20.** encourage self and other to take greater responsibilities for managing 5S
- GS21.** identify obstacles and bottlenecks in the process and find basic level solutions for removing these obstacles

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- GS22.** use previous experience in resolving problems and taking decisions
- GS23.** make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper sorting of items at the work place</i>	10	25	-	-
PC1.. ensure all recyclable materials are put in designated containers	1	2.5	-	-
PC2. ensure no tools, fixtures & jigs are lying on workstations unless in use and no un-necessary items is lying on workbenches or work surfaces unless in use	1	2.5	-	-
PC3. ensure that the operators and other team members are segregating the waste in hazardous/ non hazardous waste as per the sorting work instructions	1	2.5	-	-
PC4. ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins	1	2.5	-	-
PC5.. segregate the items which are labelled at red tag items for the process area and keep them in the correct places	1	2.5	-	-
PC6.. ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5s guidelines/ work instructions	1	2.5	-	-
PC7. check for return of any type of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area	1	2.5	-	-
PC8. . oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material	1	2.5	-	-
PC9. ensure that areas of material storage areas are not overflowing	1	2.5	-	-
PC10. ensure proper stacking and storage of the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required	1	2.5	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper documentation and storage - streamlining & organizing the workplace</i>	3	7.5	-	-
PC11. ensure that the team follows the given instructions and checks for labelling of fluids, oils lubricants, solvents, chemicals etc and proper storage of the same to avoid spillage, leakage, fire etc	1	2.5	-	-
PC12. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions	1	2.5	-	-
PC13. ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .	1	2.5	-	-
<i>Ensure cleaning of self and the work place</i>	4	10	-	-
PC14. ensure that the area has floors swept, machinery clean and is generally neat and tidy in case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards	1	2.5	-	-
PC15.. ensure workbenches and work surfaces are clean and in good condition	1	2.5	-	-
PC16.. ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination	1	2.5	-	-
PC17.. ensure all recyclable materials are put in designated containers	1	2.5	-	-
<i>Ensure standardization</i>	5	12.5	-	-
PC18. ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant	1	2.5	-	-
PC19.. ensure all recyclable materials are put in designated containers	1	2.5	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC20. . ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes	1	2.5	-	-
PC21. ensure timely creation and sharing of the 5s checklists	1	2.5	-	-
PC22. ensure that the 5s manual are available as per the timelines	1	2.5	-	-
<i>Ensure sustenance</i>	7	16	-	-
PC23. ensure team cooperation during the audit of 5 s activities	1	2.5	-	-
PC24. ensure that workmen are periodically trained to address challenges related to 5s	1	2.5	-	-
PC25.. participate actively in employee work groups on 5s and encourage team members for active participation	1	2	-	-
PC26.. oversee that the staff/operators are trained and fully understand 5s procedures	1	2	-	-
PC27. . ensure that all the guidelines for what to do and what not to do to build sustainability in 5s are mentioned in the 5s check lists/ work instructions and are easily searchable	1	2.5	-	-
PC28. ensure continuous training of the team members on 5s in order to increase their awareness and support implementation	1	2	-	-
PC29. ensure that all visual controls, notice boards, symbols etc at the manufacturing place are created, working and are put up as per the requirement	1	2.5	-	-
NOS Total	29	71	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0022
NOS Name	Ensure implementation of 5S activities at the shop floor & the office area
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	6
Credits	TBD
Version	1.0
Last Reviewed Date	15/03/2014
Next Review Date	15/03/2016
NSQC Clearance Date	

Qualification Pack

ASC/N3223: Manage end to end process related to metal casting process

Description

This NOS is about supervising end to end operations to ensure that the final products manufactured by the casting team is as per the quality and production norms set by the organization

Scope

The casting in charge will be responsible for validating the process requirement of casting process monitor the end to end casting process in the line monitor final product quality The role holder will interact with the assembly line, machine shop, heat treatment, maintenance team, HR, quality management and material management team.

Elements and Performance Criteria

Pressure Die Casting

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

- PC1.** . ensure that the engineering drawing provided to the team is the latest version available to ensure accurate casting as per demand
- PC2.** . ensure that the team members understand and follow all the does and donts of the manufacturing process as defined in sops/ work instructions or defined by supervisors/ master technicians
- PC3.** . ensure that various casting parameters like temperature etc. as well as equipment availability for executing the activity before starting the process
- PC4.** . ensure that the specifications of the finished product are as per work instructions using devices like micrometers etc. and other inspection equipment and
- PC5.** . ensure that the right casting and trimming methodology, process and parameters are in place for completing the work order before starting the casting and trimming process
- PC6.** . ensure that the material required and the equipment is available for executing the scheduled activity
- PC7..** ensure that any modifications in the casting parameters are made within defined timelines (by selecting the right program from the machine control system) if required and ensure alignment with the prescribed standards
- PC8.** . ensure that required processes are in place for slag/impurities removal from molten metal
- PC9.** . ensure that the operator has input the correct temperature and other parameters are as per the casting requirement and the required operation code is set in the casting machine for it to cast the metal into desired shape
- PC10.** . analyse any irregularities in the process and recommend preventive steps as required
- PC11..** ensure that help or advice from specialists if the problem is outside the operators area of competence or experience
- PC12..** establish linkages between rejection of output and the pertinent causes for the same (process/material etc.)
- PC13..** ensure that first and last castings from each batch are sent to the lab for quality check on its composition, soundness, no dularity etc. and a batch clearance is obtained from the lab

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- PC14..** escalate all issues related to change in colour, surface properties etc. so that the manufacturing target can be achieved
- PC15. .** ensure that the defective pieces are separated into two categories pieces which can be repaired/modified and pieces which are beyond repair. ensure that pieces beyond repair are discarded as per work instructions
- PC16. .** recommend the means for rejection control to operators whenever required

Gravity Die Casting

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

- PC17. .** ensure that the latest version of the available engineering drawing is available with the team and is adhered to ensure accurate casting
- PC18. .** ensure that the required set of activities needed to complete the work order and final output are adhered to and that the process adopted in gravity casting is as per the work instructions/sopss
- PC19. .** ensure that the assistant operator has the correct set of instructions to operate the casting machines
- PC20..** ensure that the right components are loaded in the chamber of the shot blasting machine and the required operation code is fed in the pressing machine for it to prepare the core
- PC21. .** ensure that the type of sand and apparatus to be used for making the mold is correctly identified and the casting apparatus for molten metal carrying etc. are function properly
- PC22. .** ensure that the apparatus for the selected sand making/ core making/mould making/casting process is as per the standards used in the industry
- PC23. .** oversee the sand feeding and mixing process and analyze the readings on various panels/meters to prevent machine breakdown/stoppages and deviations
- PC24. .** oversee the quality checks on output sand in terms of grain compressive strength etc.
- PC25. .** ensure that any minor defects like excess slag, holes etc. are rectified via processes like fettling, chipping etc.
- PC26. .** ensure that the first and last casting from each batch is sent to the lab for quality check on its composition, soundness, no dularity etc.
- PC27. .** ensure that the final metal casting is as prescribed in the work order and the latest engineering drawings.
- PC28..** in case the parts are not as per the given measurements, ensure that the same are sent for further processing in terms of chipping, fettling etc.
- PC29..** ensure that the final mould pattern is measured and compared with the dimensions as prescribed in the work order engineering drawing
- PC30. .** ensure timely escalation of any machine related issues regarding die setting to the machine setter in the plant
- PC31..** ensure that specialists look into the problem if it is outside the operators area of competence or experience
- PC32..** analyse any irregularities in the processes and take preventive steps whenever required

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards and procedures followed in the company

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- KU2.** different types of products manufactured by the company
- KU3.** functional processes like procurement, store management, inventory management, quality management as well as key contact points for query resolution
- KU4.** quality norms and quality policy prescribed by the organization for casting jobs
- KU5.** relevant standards specified for the manufacturing process
- KU6.** basic process followed for inspection of the finished pieces
- KU7.** different types of cleaning techniques, casting processes and associated equipments
- KU8.** different tools and equipments being used for trimming and casting
- KU9.** final product output and hence decide on the key steps to be followed for casting and trimming
- KU10.** basic principles of geometric and drawing
- KU11.** key safety aspects related to casting and foundry industry
- KU12.** different types of metallurgical processes
- KU13.** different types of casting processes and associated equipments
- KU14.** casting defects and how they are generated, how they can be prevented, knowledge of different raw materials, metals & alloys and consumables used in the melt shop
- KU15.** measuring instruments like vernier callipers, micrometers and other
- KU16.** effect of operators work on casting quality at in house and at customers, how to improve customers satisfaction
- KU17.** different types of casting and trimming processes and associated equipments
- KU18.** different types of automated processes pertinent to casting
- KU19.** mechanical laws and working of casting machines etc.
- KU20.** safety precautions to be taken for all types of casting activities
- KU21.** various casting standards in India (ISO)

Generic Skills (GS)

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

- GS1.** create first level process manuals, Control Plans, Work Instructions in a manner that the operators can easily understand the process requirements and process steps
- GS2.** create small notes/ work documents/ diagrams for supervisors, operators and helpers to help them understand the process
- GS3.** use emails and other business correspondence methods (internal memos, circular etc.) for communicating with other team members/ vendors/ suppliers etc.
- GS4.** read equipment manuals and process documents given by the equipment supplier to understand the equipment and processes better
- GS5.** discuss task lists, schedules, and work-loads with the operative team members
- GS6.** effectively explain supervisors, operators and helpers about equipment operations, process steps and other operational requirements
- GS7.** answer the queries raised by the operative team as well as intercompany departments
- GS8.** effectively communicate with the operators and helpers and make them aware of work expectations, targets, policies, processes etc.

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- GS9.** attentively listen with full attention the queries and grievances raised by the operative team and comprehend the information given by the speaker
- GS10.** break the problem into smaller issues and tasks to arrive at a solution
- GS11.** understand inter process relationship and establish relationship between various parts of the problem
- GS12.** leverage experience to find effective solutions to problems
- GS13.** use basic analytical tools to arrive at solutions
- GS14.** plan, organize and prioritize the work order and jobs received from the production manager
- GS15.** manage the schedule plan for the operators and helpers on the line/shift
- GS16.** validate all process/ equipment manuals so that the final process selected is correct
- GS17.** organize information, tools, manuals etc. on the shop floor so that sorting becomes easy
- GS18.** reorganize resources on the line/ shift in case of change of plans
- GS19.** use common sense and make judgments during day to day basis
- GS20.** use reasoning skills to identify and resolve problems
- GS21.** use intuition to detect any potential problems which could arise during operations
- GS22.** accept additional responsibility for self and the team
- GS23.** encourage self and other to take greater responsibilities
- GS24.** ensure that the work allocated to the team is completed as per timelines and quality norms
- GS25.** identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
- GS26.** identify defective parts in the manufacturing line by comparing manufactured pieces with the work standard
- GS27.** link the defect observed with the overall impact on the performance of the component/ automobile
- GS28.** support and contribute in monitoring and delivering high quality output from self and others
- GS29.** train team members on maintaining quality standards set by the organization
- GS30.** use previous experience in resolving problems and taking decisions
- GS31.** make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization
- GS32.** familiarise with leading practices available in the market
- GS33.** think independently on new approaches to manufacturing process, material management, data management and teammanagement
- GS34.** represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Pressure Die Casting</i>	15	35	-	-
PC1. . ensure that the engineering drawing provided to the team is the latest version available to ensure accurate casting as per demand	1	2	-	-
PC2. . ensure that the team members understand and follow all the does and donts of the manufacturing process as defined in sops/ work instructions or defined by supervisors/ master technicians	1	2	-	-
PC3. . ensure that various casting parameters like temperature etc. as well as equipment availability for executing the activity before starting the process	1	2	-	-
PC4. . ensure that the specifications of the finished product are as per work instructions using devices like micrometers etc. and other inspection equipment and	1	2	-	-
PC5. . ensure that the right casting and trimming methodology, process and parameters are in place for completing the work order before starting the casting and trimming process	1	3	-	-
PC6. . ensure that the material required and the equipment is available for executing the scheduled activity	1	2	-	-
PC7.. ensure that any modifications in the casting parameters are made within defined timelines (by selecting the right program from the machine control system) if required and ensure alignment with the prescribed standards	1	3	-	-
PC8. . ensure that required processes are in place for slag/impurities removal from molten metal	1	2	-	-
PC9. . ensure that the operator has input the correct temperature and other parameters are as per the casting requirement and the required operation code is set in the casting machine for it to cast the metal into desired shape	1	3	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. . analyse any irregularities in the process and recommend preventive steps as required	1	2	-	-
PC11.. ensure that help or advice from specialists if the problem is outside the operators area of competence or experience	1	2	-	-
PC12.. establish linkages between rejection of output and the pertinent causes for the same (process/material etc.)	1	2	-	-
PC13.. ensure that first and last castings from each batch are sent to the lab for quality check on its composition, soundness, no dularity etc. and a batch clearance is obtained from the lab	1	2	-	-
PC14.. escalate all issues related to change in colour, surface properties etc. so that the manufacturing target can be achieved	0.5	2	-	-
PC15. . ensure that the defective pieces are separated into two categories pieces which can be repaired/modified and pieces which are beyond repair. ensure that pieces beyond repair are discarded as per work instructions	0.5	2	-	-
PC16. . recommend the means for rejection control to operators whenever required	1	2	-	-
<i>Gravity Die Casting</i>	15	35	-	-
PC17. . ensure that the latest version of the available engineering drawing is available with the team and is adhered to ensure accurate casting	1	2	-	-
PC18. . ensure that the required set of activities needed to complete the work order and final output are adhered to and that the process adopted in gravity casting is as per the work instructions/sopss	1	3	-	-
PC19. . ensure that the assistant operator has the correct set of instructions to operate the casting machines	1	2	-	-
PC20.. ensure that the right components are loaded in the chamber of the shot blasting machine and the required operation code is fed in the pressing machine for it to prepare the core	1	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC21. . ensure that the type of sand and apparatus to be used for making the mold is correctly identified and the casting apparatus for molten metal carrying etc. are function properly	1	2	-	-
PC22. . ensure that the apparatus for the selected sand making/ core making/mould making/casting process is as per the standards used in the industry	1	2	-	-
PC23. . oversee the sand feeding and mixing process and analyze the readings on various panels/meters to prevent machine breakdown/stoppages and deviations	1	3	-	-
PC24. . oversee the quality checks on output sand in terms of grain compressive strength etc.	1	3	-	-
PC25. . ensure that any minor defects like excess slag, holes etc. are rectified via processes like fettling, chipping etc.	1	2	-	-
PC26. . ensure that the first and last casting from each batch is sent to the lab for quality check on its composition, soundness, no dularity etc.	1	2	-	-
PC27. . ensure that the final metal casting is as prescribed in the work order and the latest engineering drawiings.	1	2	-	-
PC28.. in case the parts are not as per the given measurements, ensure that the same are sent for further processing in terms of chipping, fettling etc.	1	2	-	-
PC29.. ensure that the final mould pattern is measured and compared with the dimensions as prescribed in the work order engineering drawing	1	2	-	-
PC30. . ensure timely escalation of any machine related issues regarding die setting to the machine setter in the plant	0.5	2	-	-
PC31.. ensure that specialists look into the problem if it is outside the operators area of competence or experience	0.5	2	-	-
PC32.. analyse any irregularities in the processes and take preventive steps whenever required	1	2	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	70	-	-

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National Occupational Standards (NOS) Parameters

NOS Code	ASC/N3223
NOS Name	Manage end to end process related to metal casting process
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	casting
NSQF Level	6
Credits	TBD
Version	1.0
Last Reviewed Date	30/11/2013
Next Review Date	31/12/2015
NSQC Clearance Date	08/05/2015

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Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Element/ 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 Element/ PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
6. To pass the Qualification Pack assessment, every trainee should score the Recommended Pass % aggregate for the QP.
7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Recommended Pass % aggregate for QP : 75

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ASC/N0006.Maintain a safe and healthy working environment	25	75	-	-	100	15
ASC/N0016.Understanding process requirements, ensuring process implementation & suggesting process improvement initiatives	30	70	-	-	100	15

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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ASC/N0017.Manage the production related operations of the shift/line on a day to day basis	30	70	-	-	100	20
ASC/N0018.Managing the team on the line/shift on a day to day basis	30	70	-	-	100	20
ASC/N0022.Ensure implementation of 5S activities at the shop floor & the office area	29	71	-	-	100	10
ASC/N3223.Manage end to end process related to metal casting process	30	70	-	-	100	20
Total	174	426	-	-	600	100