



QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR GEMS & JEWELLERY INDUSTRY



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What are Occupational Standards(OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

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Introduction

Qualifications Pack-Goldsmith: Engraving and Embossing

SECTOR: GEMS & JEWELLERY

SUB-SECTOR: Handmade gold and gems-set jewellery

OCCUPATION: Gold smithy (Specialised)

REFERENCE ID: G&J/Q0903

ALIGNED TO: NCO-2004/7313.28

Engraving and Embossing Goldsmith: Also known as 'Repousse goldsmith', the Embossing Goldsmith makes specialised jewellery including Temple jewellery using embossing or repousse technique.

Brief Job Description: The individual works with hand and machine tools to make specialised jewellery of gold using engraving (*naqqashi*) and embossing or repousse method. The individual is also makes specific tools for embossing. It is a highly technical and creative job role.

Personal Attributes: The job requires the individual to have: aptitude for designing; attention to details; good eyesight; steady hands; ability to work for long hours in sitting position; and a lot of patience. The individual must also be able to use reflective skills in order to replicate the designs and work processes, and avoid errors and hazards.







Qualifications Pack Code	G&J/Q0903		
Job Role	Goldsmith – Engraving and Embossing		
Credits(NSQF)		Version number	1.0
Sector	Gems & Jewellery	Drafted on	05/09/13
Sub-sector	Handmade and Gems-set Jewellery	Last reviewed on	13/08/14
Occupation	Gold smithy (Specialised)	Next review date	12/08/15

Job Role	Embossing Goldsmith Also called 'Repousse Goldsmith'		
Role Description	Manufacturing jewellery component using a combination of engraving and embossing or repousse technique as well as making the tools required for the process		
NSQF level	4		
Minimum Educational Qualifications Maximum Educational Qualifications	Preferably: 10 th Standard Passed		
Training	Not applicable		
Experience	Not applicable		
Applicable National Occupational Standards (NOS)	Compulsory: 1. G&J/N0903 Use embossing technique to make jewellery components from precious metals 2. G&J/N9910 Maintain IPR and respect copyright 3. G&J/N9912 Coordinate with co-workers 4. G&J/N9914 Maintain safe work environment Optional: Not applicable		
Performance Criteria	As described in the relevant OS units		







G&J/0903 Use embossing technique to make jewellery components from precious metals

National Occupational Standard



Overview

This unit is about making jewellery using engraving and embossing or repousse technique. This also includes preparing specialised tools by Goldsmith for engraving and embossing of jewellery. Embossed components are predominantly used in Temple jewellery.







G&J/0903 Use embossing technique to make jewellery components from precious metals

Unit Code	G&J /N0903
Unit Title (Task)	Make jewellery components using embossing technique
Description	This OS unit is about making specialised jewellery including temple jewellery using a combination of engraving (<i>naqquashi</i>) and embossing technique and making the required tools
Scope	 This unit/task covers the following: Collect raw materials for making embossed components Prepare tools Sketch the design of the jewellery in the gold sheet Emboss the jewellery from the back side Engrave the embossed component on the front side Finish the embossing and engraving work Check the finished jewellery

Performance	Criterial	PC	w.r.t.	the S	cone
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Element	Performance Criteria		
Making the temple	To be competent, the user/individual on the job must be able to:		
jewellery	PC1. receive the jewellery design from the supervisor		
	PC2. roll gold sheet as per size required using sheet rolling machine		
	PC3. collect necessary wax and place it on the table where the embossing work will be done		
	PC4. understand the design requirement and collect the tools which are required for embossing		
	PC5. make the engravers and embossing nails as per the design if they are not available in specific size and shape		
	PC6. anneal the engraverl and sharpen them as per the size required for making the jewellery		
	PC7. place the gold sheet with the design sketch facing back side of the jewellery on top of the wax		
	PC8. emboss or rack the jewellery from the back side in the empty portion of the sketch by hitting them using specialised tool		
	PC9. use tools of various sizes to create depth in different parts of the sheet as per design		
	PC10. ensure that the sheet is not damaged while embossing		
	PC11. ensure that appropriate depth is created in required portion of the component, as per the design		
	PC12. remove the embossed sheet from the wax and visually check for finishing		
	PC13. place the embossed component on top of the wax facing the front side		
	PC14. engrave the embossed component on front side to provide finishing as per		
	design		







G&J/0903 Use embossing technique to make jewellery components from precious metals

G&3/0/03 USE CITIBO	ssing technique to make jewellery components from precious metals
	PC15. use appropriate engraving nails of different size to provide finish as per design PC16. ensure that there is no damage to the component while using sharp tools for engraving PC17. remove the jewellery from the wax and visually check for finishing PC18. bring clarity to the face of the motif, usually a god in temple jewellery style PC19. rework wherever necessary PC20. remove the unwanted areas in the "net cutting" process in "naqquashi" PC21. accurately and consistently etch the design in gold sheet PC22. ensure that the gold sheet is not damaged during etching and it is even PC23. create appropriate depth from the back side while embossing PC24. engrave the component accurately as per design on the front side using different engravers PC25. accurately capture the face of motif (or the god in temple jewellery) as per design PC26. remove the unwanted portions carefully without damaging the embossing PC27. ensure that all parts of the embossing is finished as per design PC28. ensure that there is no damage of gold sheet during embossing and engraving
Preparation of tools	process To be competent, the user/individual on the job must be able to: PC29. understand the design and pick appropriate tools PC30. make tools by annealing and other methods as per requirement
Checking quality	To be competent, the user/individual on the job must be able to: PC31. visually check the finished jewellery for design and completion of work PC32. submit the finished component to supervisor or production manager for further finishing work by filing, soldering, and polishing PC33. deliver the embossed components on time by reporting problems faced or anticipated well in advance
Knowledge and Unders	
A. Organizational Context (Knowledge of the company / organization and its processes)	The individual on the job needs to know and understand: KA1. company's policies on: acceptable limits of gold loss per product type; delivery timelines; safety and hazards; integrity; and personnel management KA2. work flow involved in company's jewellery manufacturing process and time required to complete each stage KA3. importance of the individual's role in the workflow KA4. reporting structure
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. entire process of specialised jewellery making such as Temple jewellery KB2. embossing and engraving techniques KB3. different types of embossed/temple jewellery, region wise, and their specifications KB4. design of the embossing/temple jewellery from dimensions on paper sketch KB5. prepare wax and other materials required for embossing KB6. different type of tools used in embossing/temple jewellery making KB7. different types of gold alloys and their properties such as malleability and hardness KB8. racking and net cutting process required for etching the design







G&J/0903 Use embossing technique to make jewellery components from precious metals KB9. design and etch the of face of the motif/god KB10. visually compare the jewellery with the design sketch to ensure finishing Skills (S) [Optional] A. Core Skills/ Basic reading and writing skills The individual on the job needs to know and understand how: **Generic Skills** SA1. to read notes and put notes on design SA2. to read company policy documents SA3. to read about embossing/temple jewellery making techniques **Calculation and Geometry skills** The individual on the job needs to know and understand how: SA4. to assess gold loss at each step of jewellery making so as to deliver product of correct weight and size SA5. to translate design into finished temple jewellery using embossing technique Teamwork and multitasking The individual on the job needs to know and understand how: SA6. to share work load with other goldsmiths SA7. to deliver the embossed components in time B. Professional Skills Using tools and consumables The individual on the job needs to know and understand how: SB1. to select required engravers as per design requirement SB2. to prepare tools as per design according to various sizes SB3. to hit the tools or engraving nails with appropriate pressure for the desired output without damaging the product SB4. to use fire in the oven or furnace for annealing the tools SB5. to manually sharpen the engraver on rough stone as per the size required SB6. to use tools without damaging the embossing or gold sheet SB7. to understand hazards involved with chemicals, furnaces and tools used **Reducing precious-metal loss** The user/individual on the job needs to know and understand: SB8. how to reduce precious metal loss below the prescribed standards SB9. how to collect broken pieces, account in job sheet and return SB10. how to follow company's policies on collecting gold dust and fragments SB11. how to suggest improvements in order to reduce precious metal loss limits Reflective thinking The individual on the job needs to know and understand how: SB12. to improve work processes SB13. use correct posture for performing the job without injuring body parts SB14. to reduce gold loss and rework **Critical thinking** The individual on the job needs to know and understand how: SB15. to spot process disruptions and delays







G&J/0903 Use embossing technique to make jewellery components from precious metals

NOS Version Control

NOS Code	G&J/N0903		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	05/09/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15



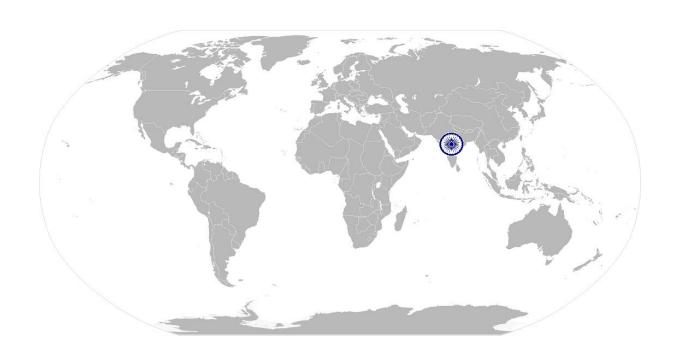






Maintain IPR and respect copyright

National Occupational Standard



Overview

This unit is about and respecting intellectual property rights (IPR) of the company's products and designs and avoiding infringement on copyrights of others.







G&J/N9910 Maintain IPR and respect copyright

G&J/N9910	Maintain IPR and respect copyright
Unit Code	G&J/N9910
Unit Title (Task)	Respect IPR of company as well as competitors
Description	This OS unit is about maintaining company's IPR and avoiding infringement on copyright of others
Scope	This unit/task covers the following:
	Protect company's Intellectual Property Rights (IPR)
	Avoid infringement to copyright of other companies
Performance Criteria(P	C) w.r.t. the Scope
Element	Performance Criteria
Respecting IPR Knowledge and Unders	To be competent, the user/individual on the job must be able to: PC1. prevent leak of new designs to competitors by reporting on time PC2. spot any infringement of company's product or design patents PC3. report IPR violations observed in the market, to supervisor or company heads PC4. read copyright clause of the material published on the internet and any other printed material PC5. consult supervisor or senior management when in doubt about using publicly available information PC6. report any infringement observed in the company PC7. spot plagiarism and report PC8. understand rationale of patents and IPR PC9. avoid being involved in IPR violations

A. Organizational Context	The individual on the job needs to know and understand: KA1. company's policies on IPR, plagiarism and order leaks KA2. company's patented products KA3. market trends and company's unique product range KA4. reporting structure
B. Technical	The individual on the job needs to know and understand:
Knowledge	KB1. basics of patents and IPR laws KB2. how IPR protection is important for competitiveness of a company
	RB2. How it it protection is important for competitiveness of a company
Skills (S) [Optional]	
A. Core Skills/	Communication skills
Generic Skills	The user/individual on the job needs to know and understand how:
B. Professional Skills	SA1. to effectively communicate any observed IPR violations or design leaks Decision making
2. T. O. COSTOTIAL SKIIIS	The user/individual on the job needs to know and understand when and how: SB1. to report sources of IPR violations







G&J/N9910 Maintain IPR and respect copyright

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Reflective thinking
The user/individual on the job needs to know and understand how:
SB2. to learn from past mistakes and report IPR violations on time
Critical thinking
The user/individual on the job needs to know and understand how:
SB3. to spot signs of violations and alert authorities in time







Maintain IPR and respect copyright

NOS Version Control

NOS Code	G&J/N9910		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	05/09/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15

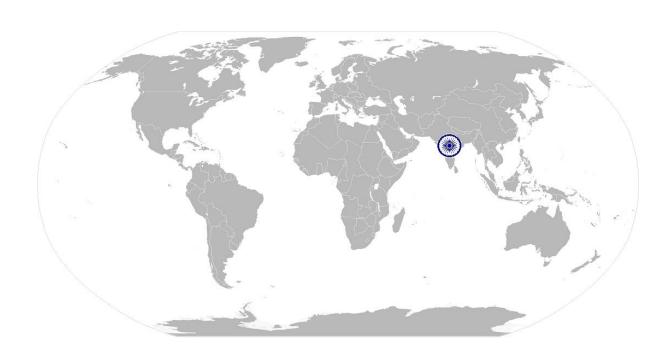






Coordinate with co-workers

National Occupational Standard



Overview

This unit is about the artisan or bench worker's level of communication with colleagues or clients. It determines the goldsmith's ability to work as a team member, share work and multi-task in order to achieve the required deliverables on schedule.







Coordinate with co-workers

Unit Code	G&J/N9912
Unit Title (Task)	Interact with colleagues and seniors
Description	This OS unit is about communicating with colleagues and seniors in order to maintain smooth ad hazards free work flow
Scope	This unit/task covers the following:
	Interact with supervisor
	Interact with colleagues within and outside the department
Performance Criteria(P	C) w.r.t. the Scope
Element	Performance Criteria
Interaction with supervisor Interactions with colleagues and other departments	To be competent, the user/individual on the job must be able to: PC1. receive and understand work instructions from reporting superior PC2. communicate to reporting supervisor about process flow improvements, product defects received from previous process, repairs and maintenance of tools and machinery as required PC3. communicate any potential hazards or expected process disruptions PC4. handover completed work to supervisor PC5. understand the work output requirements PC6. comply with company policy and rule PC7. deliver quality work on time as required by reporting any anticipated reasons for delays To be competent, the user/individual on the job must be able to: PC8. work as a team with colleagues and share work as per their or own work load and skills PC9. work with colleagues of other departments such as frame making or component making or polishing or setting or stores PC10. communicate an discuss work flow related difficulties in order to find solutions with mutual agreement PC11. receive feedback from QC and rework in order to complete work on time
	PC12. put team over individual goals PC13. resolve conflicts and multi-task
Knowledge and Unders	standing (K)
A. Organizational Context (Knowledge of the company / organization and its processes)	The individual on the job needs to know and understand: KA1. company's policies on personnel management KA2. work flow involved in company's jewellery manufacturing process KA3. importance of the individual's role in the workflow KA4. reporting structure







Coordinate with co-workers

B. Technical		The individual on the job needs to know and understand:
Knowledge		KB1. how to communicate effectively
Ü		KB2. how to build team coordination
SI	kills (S) [Optional]	
A	. Core Skills/	Teamwork and some multitasking
	Generic Skills	The individual on the job needs to know and understand how:
		SA1. to share work load as required
		SA2. to deliver product to next work process on time
В	. Professional Skills	Decision making
		The individual on the job needs to know and understand:
		SB1. how to report potential areas of disruptions to work process
		SB2. when to report to supervisor and when to deal with a colleague depending on
		the type of concern
		Reflective thinking
		The individual on the job needs to know and understand:
		SB5. how to improve work process
		Critical thinking
		The individual on the job needs to know and understand:
		SB6. how to spot process disruptions and delays







Coordinate with co-workers

NOS Version Control

NOS Code	G&J/N9912		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	05/09/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15

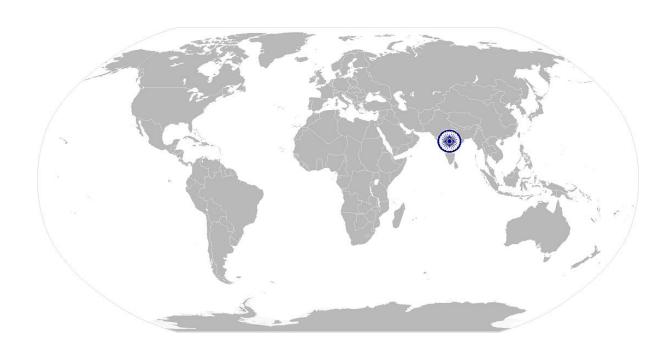






G&J/N9914 Maintain safe work environment

National Occupational Standard



Overview

This unit is about the artisan or bench worker's commitment towards reporting potential hazards and containing accidents in order to make the work environment safe for self and colleagues.



National Occupational Standards



G&J/N9914

Maintain safe work environment

003/11//14	Manieum Sale Work environment
Unit Code	G&J/N9914
Unit Title (Task)	Work towards having a safe work environment
Description	This OS unit is about being aware of and communicating potential hazards and dangers of accidents on the job
Scope	This unit/task covers the following:
	Understand potential sources of accidents
	Communicate to reporting supervisor about hazards in time
Performance Criteria(P	C) w.r.t. the Scope
Element	Performance Criteria
Understanding of potential sources of accidents and communicating	To be competent, the user/individual on the job must be able to: PC1. avoid accidents related to use of potentially dangerous chemicals, gas torches, sharp tools and hazards from machines PC2. suggest process flow improvements to reduce anticipated or repetitive hazards PC3. report mishandling of tools, machines or hazardous materials
	PC4. identify electrical problems that could result in accident PC5. spot and report potential hazards on time PC6. follow company policy and rules regarding hazardous materials PC7. deliver quality work on time as required by reporting any anticipated reasons for delays
Knowledge and Unders	
A. Organizational Context (Knowledge of the company / organization and its processes)	 The individual on the job needs to know and understand: KA1. company's policies on handling: harmful chemicals and sharp tools, safety and hazards of machines, fire safety and, disposal of harmful chemicals and materials KA2. work flow involved in company's jewellery manufacturing process KA3. importance of the individual's role in the workflow KA4. reporting structure
B. Technical Knowledge	The individual on the job needs to know and understand: KB1. how different chemicals react and what could be the danger from them KB2. how to use machines and tools without causing bodily harm KB3. fire safety education KB4. disposal of hazardous chemicals, tools and materials by following prescribed environmental norms or as per company policy
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	Communication skills The individual on the job needs to know and understand how:
	SA1. to effectively communicate the danger







Maintain safe work environment

B. Professional Skills	Decision making		
	The individual on the job needs to know and understand:		
	SB1. importance of reporting potential sources of danger		
	SB2. appropriate actions to be taken in the event of an accident		
	SB3. process for disposing of hazardous materials, safely and following		
	environmental guidelines		
Reflective thinking			
	The individual on the job needs to know and understand how:		
	SB4. to learn from past mistakes regarding use of hazardous machines or		
	chemicals or gas torches		
	Critical thinking		
	The individual on the job needs to know and understand:		
	SB5. how to spot danger		
	SB6. procedures to follow in the event of a fire or other hazard		







Maintain safe work environment

NOS Version Control

NOS Code	G&J/N9914		
Credits(NSQF) [OPTIONAL]	TBD	Version number	1.0
Industry	Gems & Jewellery	Drafted on	05/09/13
Industry Sub-sector	Handmade Gold and Gems-set Jewellery	Last reviewed on	13/08/14
		Next review date	12/08/15





Keywords /Terms	Description		
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.		
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.		
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.		
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or an area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.		
Sub-function	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.		
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.		
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.		
Performance Criteria	Performance criteria are statements that together specify the standard of performance required when carrying out a task.		
National Occupational Standards (OS)	NOS are occupational standards which apply uniquely in the Indian context.		
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.		
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'		
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.		
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.		
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.		
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.		
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.		
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish		





	specific designated responsibilities.		
Core Skills/ Generic Skills	Core skills or generic skills are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.		
Keywords /Terms Description			
IPR	Intellectual Property Rights		
NOS	National Occupational Standard(s)		
NVQF	National Vocational Qualifications Framework		
NSQF	National Qualifications Framework		
NVEQF	National Vocational Education Qualifications Framework		
QP	Qualifications Pack		

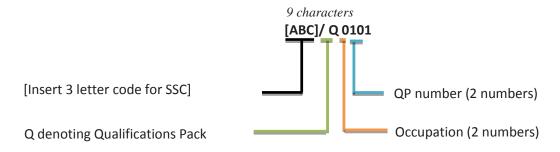




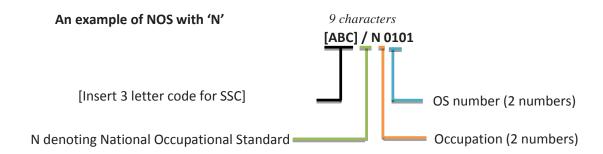
Annexure

Nomenclature for QP and NOS

Qualifications Pack



Occupational Standard



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The following acronyms/codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers	
Handmade gold and gems-set jewellery	01-20	
Cast and diamond-set jewellery	21-40	
Diamond processing	41-60	
Gemstone processing	61-80	
Jewellery retailing	81-98	

Sequence	Description	Example
Three letters	Industry name	G&J
Slash	/	/
Next letter	Whether Q P or N OS	Q
Next two numbers	Occupation code	07
Next two numbers	OS number	02



Job Role

Qualification Pack

Sector Skill Council



CRITERIA FOR ASSESSMENT OF TRAINEES

Engraving & Embossing

Engraving & Embossing

GEMS & JEWELLERY

To pass the Assessment, a candidate needs to score 50% in Theory and 70% in Practical

Assessment Strategy			Marks Allocation	
NOS	Elements	Performance Criteria	Theory	Practical
		PC1. understand the work requirement by reading the design	0	7
		PC2. accurately and consistently etch the design in gold sheet	1	7
		PC3. ensure that the gold sheet is not damaged during etching and it is	4	7
		even	1	7
		PC4. create appropriate depth from the back side while embossing	1	7
		PC5. engrave the component accurately as per design on the front	4	0
G&J/N0903	Making the temple	side using different engravers	1	6
Use embossing	jewellery	PC6. accurately capture the face of motif (or the god in temple	0	0
technique to		jewellery) as per design	0	6
make jewellery		PC7. remove the unwanted portions carefully without damaging the	0	
components from precious		embossing	2	6
metals	Preparation of tools Handling problems	PC8. ensure that all parts of the embossing is finished as per design	1	6
		PC9. ensure that there is no damage of gold sheet during embossing	1	7
		and engraving	I	, , , , , , , , , , , , , , , , , , ,
		PC10. understand the design and pick appropriate tools	1	6
		PC11. make tools by annealing and other methods as per requirement	2	3
		PC12. deliver the embossed components on time by reporting	1	2
	Transming problems	problems faced or anticipated well in advance		
		Sub Total	12	70
2. G&J/N9901		PC1. Spot plagiarism and report	0	1
Maintain IPR	Respecting IPR	PC2. understand rationale of patents and IPR	0	1
and respect copyright		PC3. avoid being involved in IPR violations	0	1
		Sub Total	0	3
0.00.1/N/4000		PC1. Understand the work output requirements	1	2
3. G&J/N1903	I Interaction with	PC2. Comply with Company policy and rule	1	1
Coordinate with Others		PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays	0	1





CRITERIA FOR ASSESSMENT OF TRAINEES				
	Interactions with	PC4. Put team over individual goals	0	0
	colleagues and other departments	PC5. Conflicts resolution and multi-tasking	0	1
		Sub Total	2	5
4 C 9 I/NI4007	Understanding of potential sources of accidents and communicating	PC1. Spot and report potential hazards on time	2	1
4. G&J/N1907 Maintain safe		PC2. Follow company policy and rules regarding use of hazardous materials	1	0
work environment		PC3. Deliver quality work on time as required by reporting any anticipated reasons for delays	3	1
		Sub Total	6	2
		Total	20	80



