

**ASSESSMENT
MATERIAL****EVIDENCE
GUIDE****Qualification code:**

0214G&J4

Level: 03**Credit:** 80**Version:** 1**GEMOLOGY****CONTENTS**

1. Assessment Summary and Record
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**ASSESSMENT
AND
ASSESSMENT
PANEL DETAILS****Competent**☐**Not Yet Competent**☐**Assessment**☐**Re-Assessment**☐

Candidate's Instructor name:

Candidate's Instructor signature:

Private Sector Expert's name:

Private Sector Expert's signature:

Assessor's Name:

Assessor Code:

Assessor's Signature: Date

DD	MM							YYYY	

**CANDIDATE
DETAILS**

Candidate Name:

First Name

Last Name

Father Name

Institute Name and
District

CNIC #

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OR

Registration Number:

Gender

Male ☐Female ☐

Candidate Consent

I agree to the time and date of the assessment and am aware of the requirements of the assessment. I fully understand my rights of appeal.

Candidate Signature:

**ASSESSMENT
RESULTS
SUMMARY FORM**You can use this coversheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTTC**

NAVTTTC OFFICE ONLY

1. DATE FORM

RECEIVED:

DD	MM	YYYY					

2. DATE ENTERED INTO
DATABASE:

DD	MM	YYYY					

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ASSESSMENT SUMMARY AND RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
NATURE OF ACTIVITY	WRITTEN	ORAL	PORTFOLIO	OBSERVATION	DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF: GEMOLOGY	COMPETENT	NOT YET COMPETENT
Practical final project	✓	✓		✓	Complete supplied project brief related to Gemology - Assess physical properties of Gemstone Identification - Evaluate optical properties of Gemstone - Differentiate between natural, treated, imitation and synthetic Gemstone - Identifying Organic Gemstone - Perform color stone grading (Other Than Diamond) - Perform Diamond grading		
Knowledge assessment	✓	✓			Answer all questions your Assessor may have during the practical assessment for: - Assess physical properties of Gemstone Identification - Evaluate optical properties of Gemstone - Differentiate between natural, treated, imitation and synthetic Gemstone - Identifying Organic Gemstone - Perform color stone grading (Other Than Diamond) - Perform Diamond grading		
Other requirements					N/A		

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CANDIDATE ASSESSMENT

Candidate Name..... Father Name

ALL WORK ASSESSED FOR THESE COMPETENCY STANDARDS MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to complete the following tasks within **five hours** timeframe:

- Assess physical properties of Gemstone Identification
- Evaluate optical properties of Gemstone
- Differentiate between natural, treated, imitation and synthetic Gemstone
- Identifying Organic Gemstone
- Perform color stone grading (Other Than Diamond)
- Perform Diamond grading

Important Note: The following general performance criteria will be followed and performed in all the tasks (where applicable) by the candidate in order to meet this standard.

- ✓ Follow health and safety procedure as per the requirements of given task
- ✓ Prepare work station as per the requirements of task
- ✓ Select tools/ equipment as per the requirements of task
- ✓ Report to supervisor in case of any contingency after taking necessary actions
- ✓ Complete the work by following sequence of operations
- ✓ Perform task(s) within standard timeframe

ACTIVITIES	CANDIDATE RESPONSE
I. Complete practical task in assessing the physical properties of gemstone	During Practical assessment under observation by an assessor, I will correctly carry out the following task. • IDENTIFY COLOR OF STONE ✓ Identify Hue(body color) of stone ✓ Identify tone of stone ✓ Identify saturation of stone • IDENTIFY CUT OF STONE ✓ Identify Cut of stone ✓ Identify Symmetry cut of stone ✓ Measure the dimensions of the cut stone • ASSESS TRANSPARENCY OF STONE ✓ Check the transparency of stone and mark as transparent, translucent or Opaque • ASSESS THE CRYSTAL SYSTEM ✓ Check and identify the crystal system of stone with the help of dummy samples • PERFORM HARDNESS TEST ✓ Check the Hardness of rough stone by using Moh's Hardness kit ✓ Identify the stone on the basis of hardness • PERFORM SPECIFIC GRAVITY WITH HYDROSTATIC BALANCE ✓ Adjust the Hydrostatic balance and calculate specific gravity of the stone. ✓ Identify the stone as per specific gravity • ASSESS CLARITY OF STONE ✓ Clarity type(1,2 or 3) with the help of Loupe(10x) ✓ Identify the inclusions in stone

II. Complete practical task in evaluate optical properties of gemstone	• IDENTIFY GEMSTONE WITH LIGHT SOURCE ✓ Adjust lighting source/ inspection lamp ✓ Observe brilliancy under light ✓ Observe Dispersion under light if any ✓ Identify the brilliancy and dispersion • IDENTIFY PHENOMENON IN STONE ✓ Adjust lighting source/ Inspection lamp ✓ Check phenomenon in stone if any ✓ Identify the type of phenomenon • PERFORM POLARIZATION TEST ✓ Arrange Polari scope ✓ Adjust the Analyzer and Polarizer ✓ Identify the stone whether single refraction, double refraction or aggregate • PERFORM PLEOCHROISM TEST ✓ Adjust dichroscope and light source to check Pleochroism in stone ✓ Observe stone for Pleochroismi.ePleochrosim, Dichroism or Trichroism ✓ Identify the Pleochroic colors if any ✓ Perform test for Refractive Index of stone • PERFORM TEST FOR REFRACTIVE INDEX OF STONE ✓ Apply liquid on hemi-cylinder and place stone on it properly ✓ Note whether stone is Single refraction, Double Refraction or Anomalously double refraction. ✓ Calculate birefringence of stone
III. Complete practical task in differentiating between natural, treated, imitation and synthetic Gemstone	• IDENTIFY NATURAL GEMSTONE ON THE BASIS OF INCLUSIONS ✓ Adjust gemological microscope ✓ Observe the inclusions under different lighting techniques (bright, dark, reflected, diffused) ✓ plot a sketch of inclusions as per observations • IDENTIFY TREATED GEMSTONE ON BASIS OF INCLUSIONS ✓ Adjust gemological microscope ✓ Observe the inclusions under different lighting techniques (bright, dark, reflected ,diffused) ✓ plot a sketch of inclusions as per observations • IDENTIFY IMITATION/ASSEMBLED GEMSTONE ON BASIS OF INCLUSIONS ✓ Adjust gemological microscope ✓ Observe the Imitation/Assembled inclusions under different lighting techniques (bright, dark, reflected ,diffused) ✓ plot a sketch of inclusions as per observations • IDENTIFY OF SYNTHETIC GEMSTONE ON BASIS OF INCLUSIONS ✓ Adjust gemological microscope ✓ Observe the Synthetic inclusions under different lighting techniques (bright, dark, reflected ,diffused) ✓ plot a sketch of inclusions as per observations

IV. Complete practical task in identifying organic Gemstone	• IDENTIFY PEARL ✓ Identify color and tone of Pearl ✓ Identify Luster and Shape ✓ Measure size ✓ Identify type whether Natural/ cultured • IDENTIFY CORAL ✓ Identify color and tone of Coral ✓ Identify Luster ✓ Identify cut ✓ Identify type whether Natural/Imitation • IDENTIFY AMBER ✓ Identify color and tone of Amber ✓ Identify Luster and Shape ✓ Identify cut ✓ Identify type whether Natural/Imitation • IDENTIFY OTHER ORGANIC GEMSTONE ✓ Identify color and tone of stone ✓ Identify Luster ✓ Identify Ivory and its imitation ✓ Identify fossils, shells etc • IDENTIFY CUT AND PERFORM WEIGHT OF STONE ✓ Weight the stone on weighing balance ✓ Identify the cutting style of stone
V. Complete practical task in performing color stone grading (other than diamond) and in performing Diamond Grading	• PERFORM COLOR GRADING ✓ Identify Hue (Body color) of stone ✓ Identify tone of stone ✓ Identify saturation of stone ✓ Record stone's color • PERFORM CLARITY GRADING ✓ Check clarity with the help of loupe and tweezers ✓ Observe the inclusions size ,position and relief ✓ Record the clarity type • PERFORM CUT GRADING ✓ Identify the cut ✓ Check the cut symmetry ✓ Check the proportion ✓ Check the blemishes and observe polish quality ✓ Record the cut grade
2. Other requirements	• NA
3. Answer any questions your Assessor may have during the practical assessment	• My answers to questions are correct and demonstrate my understanding of the topics and their application

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ASSESSOR JUDGEMENT GUIDE

Candidate NameFather Name

INSTRUCTIONS FOR ASSESSMENT PANEL

THIS SECTION CONTAINS MINIMUM EVIDENCE REQUIREMENTS

- The Assessment Panel will consist of three members: a registered Assessor, the candidate's Instructor and an expert from the private sector.
- The project brief will consist of integrated task requirements to enable the candidate to supply sufficient evidence of their competence in the skills required to work as a Gemologist
- The project brief must be suitable for the level of knowledge and skills required (i.e. Level 3)
- The time frame for completion of assigned project brief is 5 hours

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task in performing Gemology assignments under observation by an assessor, including:	During a practical assessment under observation by and assessor, the candidate correctly carried out the following tasks:			
Identify Color of stone	Identify Hue(body color) of stone			
	Identify tone of stone			
	Identify saturation of stone			
Identify Cut of stone	Identify Cut of stone			
	Identify Symmetry cut of stone			
	Measure the dimensions of the cut stone			
Assess Transparency of stone	Check the transparency of stone and mark as transparent, translucent or Opaque			
Assess Clarity of stone	Check and identify the crystal system of stone with the help of dummy samples			
Perform Hardness Test	Check the Hardness of rough stone by using Moh's Hardness kit			
	Identify the stone on the basis of hardness			
Perform Specific Gravity with Hydrostatic Balance	Adjust the Hydrostatic balance and calculate specific gravity of the stone.			
	Identify the stone as per specific gravity			
Assess Clarity of stone	Check Clarity type(1,2 or 3) with the help of Loupe(10x)			
	Identify the inclusions in stone			
Identify gemstone with light source	Adjust lighting source/ inspection lamp			
	Observe brilliancy under light			
	Observe Dispersion under light if any			
	Identify the brilliancy and dispersion			

Identify Phenomenon in stone	Adjust lighting source/ Inspection lamp			
	Check phenomenon in stone if any			
	Identify the type of phenomenon			
Perform Polarization test	Arrange Polariscope			
	Adjust the Analyzer and Polarizer			
	Identify the stone whether single refraction, double refraction or aggregate			
Perform Pleochroism test	Adjust dichroscope and light source to check Pleochroism in stone			
	Observe stone for Pleochroism, Dichroism or Trichroism			
	Identify the Pleochroic colors if any			
	Perform test for Refractive Index of stone			
Perform test for Refractive Index of stone	Apply liquid on hemi-cylinder and place stone on it properly			
	Note whether stone is Single refraction, Double Refraction or Anomalously double refraction.			
	Calculate birefringence of stone			
Identification of Natural gemstone on basis of inclusions	Adjust gemological microscope			
	Observe the inclusions under different lighting techniques (bright, dark, reflected, diffused)			
	Plot a sketch of inclusions as per observations			
Identification of Treated gemstone on basis of inclusions	Adjust gemological microscope			
	Observe the inclusions under different lighting techniques (bright, dark, reflected, diffused)			
	Plot a sketch of inclusions as per observations			
Identification of Imitation/Assembled gemstone on basis of inclusions	Adjust gemological microscope			
	Observe the Imitation/Assembled inclusions under different lighting techniques (bright, dark, reflected, diffused)			
	Plot a sketch of inclusions as per observations			
Identification of Synthetic gemstone on basis of inclusions	Adjust gemological microscope			
	Observe the Synthetic inclusions under different lighting techniques (bright, dark, reflected, diffused)			
	Plot a sketch of inclusions as per observations			
Identify Pearl	Identify color and tone of Pearl			
	Identify Luster and Shape			
	Measure size			
	Identify type whether Natural/Imitation			

Identify Coral	Identify color and tone of Coral			
	Identify Luster			
	Identify cut			
	Identify type whether Natural/Imitation			
Identify Amber	Identify color and tone of Amber			
	Identify Luster and Shape			
	Identify cut			
	Identify type whether Natural/Imitation			
Identify type of organic gemstone	Identify color and tone of stone			
	Identify Luster			
	Identify Ivory and its imitation			
	Identify fossils, shells etc			
Identify cut and perform weight of stone	Weight the stone on weighing balance			
	Identify the cutting style of stone			
Perform Color Grading	Identify Hue (Body color) of stone			
	Identify tone of stone			
	Identify saturation of stone			
	Record stone's color			
Perform Clarity Grading	Check clarity with the help of loupe and tweezers			
	Observe the inclusions size ,position and relief			
	Record the clarity type			
Perform Cut Grading	Identify the cut			
	Check the cut symmetry			
	Check the proportion			
	Check the blemishes and observe polish quality			
	Record the cut grade			
Perform Weight Grading	Adjust weighing balance and take the weight of the Gemstone			

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS ON CANDIDATE PERFORMANCE
2. Answer any questions their Assessor may have during the practical assessment	Candidate answers to questions are correct and demonstrate understanding of the topics and their application. <i>Assessor to document all questions asked and candidate answers below. Use extra sheets if required and attach.</i>			

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LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	This section contains information regarding; - Context of the assessment - List of required tools and equipment. - List of consumable items required during the service
1.Context of Assessment	This practical final project will be conducted in a Lapidary lab/workshop environment. Required tools, equipment and consumables will vary according to project brief.

2. List of tools and equipment required		
S. No	Name of Items (tools and equipments)	Quantity
01	Light source	
02	Moh's Hardness Pencil	
03	Loupe(10x)	
04	Tweezers	
05	Hydrostatic Balance	
06	Calculator	
07	Polariscope	
10	Refractometer	
11	Dichroscope	
12	Microscope	
13	weighing Balance	
14	Gemstone master sample or color chart	

3. List of consumables		
S. No	Name of Items	Quantity/Volume
01	Samples of Rough stone	
02	Samples of Cut stone	
03	Gemstone sample	
04	Refractometer Fluid	
05	Drawing sheets/ Paper	
06	Pen and Pencil	