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Islamabad



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GEMOLOGY

Assessment Packages

National Vocational
Certificate Level 3

Version 1 - September 2018



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Document Version

September, 2018
Islamabad, Pakistan

GEMOLOGY

Assessment Packages

National Vocational
Certificate Level 3

Version 1 - September 2018



ASSESSMENT MATERIAL

EVIDENCE GUIDE

Qualification

Gemology

CS Code: 0214G&J4 A

Level: 3

Credit: 10

Version: 01

ASSESS PHYSICAL PROPERTIES OF GEMSTONES

CONTENTS

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/ equipment, material and context of assessment

ASSESSMENT AND ASSESSOR DETAILS

Competent

NotYetCompetent

Assessment

Re-Assessment

Assessor's Name:

Assessor's Code

Assessor's Signature.....Date

DD		MM		YYYY					

CANDIDATE DETAILS

Candidate's Name:

..... First Name Last Name

Father's Name

.....

Institute Name and District

.....

CNIC/ BFORM #

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Registration Number issued by Assessment Body

.....

Gender

Male Female Transgender

Candidate's 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's Signature:

ASSESSMENT RESULTS SUMMARY FORM

You can use this cover sheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

NAVTTCC OFFICE ONLY

1. DATE FORM RECEIVED:

DD		MM		YYYY					

2. DATE ENTERED INTO DATABASE:

DD		MM		YYYY					

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: ASSESS PHYSICAL PROPERTIES OF GEMSTONE		
Practical Skill Demonstration	✓	✓		✓	<ul style="list-style-type: none"> Perform role play for Assess Physical Properties of Gemstone 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your Assessor may have during the practical assessment 		
Other Requirement					<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name:..... Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to perform within **150 Minutes** timeframe:

- **Perform a role play to demonstrate, Assess Physical Properties of Gemstone :**
 - ✓ Identify Color of stone
 - ✓ Identify Cut of stone
 - ✓ Assess Transparency of stone
 - ✓ Identify the crystal system
 - ✓ Assess Clarity of stone
 - ✓ Perform Hardness test
 - ✓ Calculate the Specific Gravity of stone with Hydrostatic Balance

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
<p>1. Complete practical task in Assessing the Physical Properties of Gemstone</p>	<p>During Practical assessment under observation by an assessor, I will correctly carry out the following task.</p> <ul style="list-style-type: none"> • IDENTIFY COLOR OF STONE <ul style="list-style-type: none"> ✓ Identify Hue(body color) of stone ✓ Identify tone of stone ✓ Identify saturation of stone • IDENTIFY CUT OF STONE <ul style="list-style-type: none"> ✓ Identify Cut of stone ✓ Identify Symmetry cut of stone ✓ Measure the dimensions of the cut stone • ASSESS TRANSPARENCY OF STONE <ul style="list-style-type: none"> ✓ Check the transparency of stone and mark as transparent, translucent or Opaque • ASSESS THE CRYSTAL SYSTEM <ul style="list-style-type: none"> ✓ Check and identify the crystal system of stone with the help of dummy samples • PERFORM HARDNESS TEST <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ Adjust the Hydrostatic balance and calculate specific gravity of the stone. ✓ Identify the stone as per specific gravity • ASSESS CLARITY OF STONE <ul style="list-style-type: none"> ✓ Check Clarity type(1,2 or 3) with the help of Loupe(10x) ✓ Identify the inclusions in stone
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

3

ASSESSOR JUDGMENT GUIDE

Candidate's Name: Father's Name:

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task in performing Assess Physical Properties of Gemstone 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			

<p>2. Answer any questions their Assessor may have during the practical assessment</p>	<p>Candidate answers to questions are correct and demonstrate Understanding of the topics and their application.</p> <p><i>Assessor to document all questions asked and candidate Answers below. Use extra sheets if required and attach.</i></p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	This section contains information regarding; <ul style="list-style-type: none">• Context of the assessment• List of required tools and equipment.• List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment

2. List of tools and equipment required		
S. No	Name of Items (tools and equipment)	Quantity
01	Light source	
02	Moh's Hardness Pencil	
03	Loupe(10x)	
04	Tweezers	
05	Hydrostatic Balance	
06	Calculator	

3. List of consumables		
S. No	Name of Items	Quantity/Volume
01	Samples of Rough stone	
02	Samples of Cut stone	
03		



ASSESSMENT MATERIAL

EVIDENCE GUIDE

Qualification

Gemology

CS Code: 0214G&J4 B

Level: 03

Credit: 18

Version: 1

EVALUATE OPTICAL PROPERTIES OF GEMSTONES

CONTENTS

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/ equipment, material and context of assessment

ASSESSMENT AND ASSESSOR DETAILS

Competent **Not Yet Competent**

Assessment **Re-Assessment**

Assessor's Name:

Assessor's Code

Assessor's Signature.....Date

DD		MM		YYYY					

CANDIDATE DETAILS

Candidate's Name:

..... First Name Last Name

Father's Name

.....

Institute Name and District

.....

CNIC/ BFORM #

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Registration Number issued by Assessment Body

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Gender

Male Female Transgender

Candidate's 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's Signature:

ASSESSMENT RESULTS SUMMARY FORM

You can use this cover sheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to **NAVTTCC**

NAVTTCC OFFICE ONLY

1. DATE FORM RECEIVED:

DD		MM		YYYY					

2. DATE ENTERED INTO DATABASE:

DD		MM		YYYY					

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: EVALUATE OPTICAL PROPERTIES OF GEMSTONE		
Practical Skill Demonstration	✓	✓		✓	<ul style="list-style-type: none"> Perform role play for Evaluate Optical Properties of Gemstone 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your Assessor may have during the practical assessment 		
Other Requirement					<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name:..... Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to perform within **150 Minutes** timeframe:

- **Perform a role play to demonstrate, Evaluate Optical Properties of Gemstone :**

- ✓ Identify gemstone with light source
- ✓ Identify Phenomenon in stone
- ✓ Perform Polarization test
- ✓ Perform Pleochroism test
- ✓ Perform test for Refractive Index of stone

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

ACTIVITIES	CANDIDATE RESPONSE
<p>1. Complete practical task in Evaluate Optical Properties of Gemstone</p>	<p>During Practical assessment under observation by an assessor, I will correctly carry out the following task.</p> <ul style="list-style-type: none"> • IDENTIFY GEMSTONE WITH LIGHT SOURCE <ul style="list-style-type: none"> ✓ Adjust lighting source/ inspection lamp ✓ Observe brilliancy under light ✓ Observe Dispersion under light if any ✓ Identify the brilliancy and dispersion • IDENTIFY PHENOMENON IN STONE <ul style="list-style-type: none"> ✓ Adjust lighting source/ Inspection lamp ✓ Check phenomenon in stone if any ✓ Identify the type of phenomenon • PERFORM POLARIZATION TEST <ul style="list-style-type: none"> ✓ Arrange Polariscope ✓ Adjust the Analyzer and Polarizer ✓ Identify the stone whether single refraction, double refraction or aggregate • PERFORM PLEOCHROISM TEST <ul style="list-style-type: none"> ✓ Adjust dichroscope and light source to check Pleochroism in stone ✓ Observe stone for Pleochroism i.e Pleochrosim, Dichroism or Trichroism ✓ Identify the Pleochroic colors if any ✓ Perform test for Refractive Index of stone • PERFORM TEST FOR REFRACTIVE INDEX OF STONE <ul style="list-style-type: none"> ✓ 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.
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

3

ASSESSOR JUDGMENT GUIDE

Candidate's Name: Father's Name:

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task in performing Assess Optical Properties of Gemstone under observation by an assessor, including:	During a practical assessment under observation by and assessor, the candidate correctly carried out the following tasks:			
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 Polaroscope			
	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 i.e Pleochrosim, 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			

<p>2. Answer any questions their Assessor may have during the practical assessment</p>	<p>Candidate answers to questions are correct and demonstrate Understanding of the topics and their application.</p> <p><i>Assessor to document all questions asked and candidate Answers below. Use extra sheets if required and attach.</i></p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment

2. List of tools and equipment required
--

S. No	Name of Items (tools and equipment)	Quantity
01	Light source	
02	Polariscope	
03	Loupe(10x)	
04	Tweezers	
05	Refractometer	
06	Dichroscope	

3. List of consumables

S. No	Name of Items	Quantity/Volume
01	Gemstone sample	
02	Refractometer Fluid	



ASSESSMENT MATERIAL

EVIDENCE GUIDE

Qualification

Gemology

CS Code: 0214G&J4 C

Level: 03

Credit: 20

Version: 1

DIFFERENTIATE BETWEEN NATURAL, TREATED, IMITATION AND SYNTHETIC GEMSTONE

CONTENTS

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/ equipment, material and context of assessment

ASSESSMENT AND ASSESSOR DETAILS

Competent

Not Yet Competent

Assessment

Re-Assessment

Assessor's Name:

Assessor's Code

Assessor's Signature.....Date

DD		MM		YYYY					

CANDIDATE DETAILS

Candidate's Name:

..... First Name Last Name

Father's Name

.....

Institute Name and District

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CNIC/ BFORM #

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Registration Number issued by Assessment Body

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Gender

Male Female Transgender

Candidate's 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's Signature:

ASSESSMENT RESULTS SUMMARY FORM

You can use this cover sheet 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					

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....							
ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: DIFFERENTIATE BETWEEN NATURAL ,TREATED, IMITATION AND SYNTHETIC GEMSTONE		
Practical Skill Demonstration	✓	✓		✓	<ul style="list-style-type: none"> Perform role play for Differentiate between natural ,treated, imitation and synthetic gemstone 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your Assessor may have during the practical assessment 		
Other Requirement					<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name:..... Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to perform within **150 Minutes** timeframe:

- **PERFORM A ROLE PLAY TO DEMONSTRATE, DIFFERENTIATE BETWEEN NATURAL ,TREATED, IMITATION AND SYNTHETIC GEMSTONE:**
 - ✓ Identify Natural gemstone on basis of inclusions
 - ✓ Identify Treated gemstone on basis of inclusions
 - ✓ Identify Imitation/Assembled gemstone on basis of inclusions
 - ✓ Identify Synthetic gemstone on basis of inclusions

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
<p>1. Complete practical task in Differentiating between natural ,treated, imitation and synthetic gemstone</p>	<p>During Practical assessment under observation by an assessor, I will correctly carry out the following task.</p> <ul style="list-style-type: none"> ● IDENTIFY NATURAL GEMSTONE ON THE BASIS OF INCLUSIONS <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ Adjust gemological microscope ✓ Observe the Synthetic inclusions under different lighting techniques (bright, dark, reflected ,diffused) ✓ plot a sketch of inclusions as per observations
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

Candidate's Name: Father's Name:

**INSTRUCTIONS
FOR
ASSESSOR**

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task in performing gemstone Differentiate between natural ,treated, imitation and synthetic	During a practical assessment under observation by and assessor, the candidate correctly carried out the following tasks:			
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			

<p>2. Answer any questions their Assessor may have during the practical assessment</p>	<p>Candidate answers to questions are correct and demonstrate Understanding of the topics and their application.</p> <p><i>Assessor to document all questions asked and candidate Answers below. Use extra sheets if required and attach.</i></p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment

2. List of tools and equipment required		
S. No	Name of Items (tools and equipment)	Quantity
01	Microscope	
02	Tweezers	
03	Loupe(10x)	

3. List of consumables		
S. No	Name of Items	Quantity/Volume
01	Drawing sheets/ Paper	
02	Gemstone sample	
03	Pen and Pencil	



ASSESSMENT MATERIAL

EVIDENCE GUIDE

Qualification

Gemology

CS Code: 0214G& J4 D

Level: 03

Credit: 08

Version: 1

ORGANIC GEMSTONE

CONTENTS

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/ equipment, material and context of assessment

ASSESSMENT AND ASSESSOR DETAILS

Competent

Not Yet Competent

Assessment

Re-Assessment

Assessor's Name:

Assessor's Code

Assessor's Signature..... Date

DD		MM		YYYY					

CANDIDATE DETAILS

Candidate's Name:

..... First Name Last Name

Father's Name

.....

Institute Name and District

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CNIC/ BFORM #

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Registration Number issued by Assessment Body

.....

Gender

Male Female Transgender

Candidate's 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's Signature:

ASSESSMENT RESULTS SUMMARY FORM

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NAVTTCC OFFICE ONLY

1. DATE FORM RECEIVED:

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2. DATE ENTERED INTO DATABASE:

DD		MM		YYYY					

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: ORGANIC GEMSTONE		
Practical Skill Demonstration	✓	✓		✓	<ul style="list-style-type: none"> Perform role play for Organic Gemstone 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your Assessor may have during the practical assessment 		
Other Requirement					<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name:..... Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to perform within **3 hours** timeframe:

- **PERFORM A ROLE PLAY TO DEMONSTRATE, ORGANIC GEMSTONE :**

- ✓ Identify Pearl
- ✓ Identify Coral
- ✓ Identify Amber
- ✓ Identify other organic gemstone
- ✓ Record weight of stone

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
<p>1. Complete practical task in Organic Gemstone</p>	<p>During Practical assessment under observation by an assessor, I will correctly carry out the following task.</p> <ul style="list-style-type: none"> ● IDENTIFY PEARL <ul style="list-style-type: none"> ✓ Identify color and tone of Pearl ✓ Identify Luster and Shape ✓ Measure size ✓ Identify type whether Natural/ cultured ● IDENTIFY CORAL <ul style="list-style-type: none"> ✓ Identify color and tone of Coral ✓ Identify Luster ✓ Identify cut ✓ Identify type whether Natural/Imitation ● IDENTIFY AMBER <ul style="list-style-type: none"> ✓ Identify color and tone of Amber ✓ Identify Luster and Shape ✓ Identify cut ✓ Identify type whether Natural/Imitation ● IDENTIFY OTHER ORGANIC GEMSTONE <ul style="list-style-type: none"> ✓ Identify color and tone of stone ✓ Identify Luster ✓ Identify Ivory and its imitation ✓ Identify fossils, shells etc ● IDENTIFY CUT AND PERFORM WEIGHT OF STONE <ul style="list-style-type: none"> ✓ Weight the stone on weighing balance ✓ Identify the cutting style of stone
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

3

ASSESSOR JUDGMENT GUIDE

Candidate's Name: Father's Name:

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task in performing Organic Gemstone under observation by an assessor, including:	During a practical assessment under observation by and assessor, the candidate correctly carried out the following tasks:			
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			

<p>2. Answer any questions their Assessor may have during the practical assessment</p>	<p>Candidate answers to questions are correct and demonstrate Understanding of the topics and their application.</p> <p><i>Assessor to document all questions asked and candidate Answers below. Use extra sheets if required and attach.</i></p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment

2. List of tools and equipment required		
S. No	Name of Items (tools and equipment)	Quantity
01	Light source	
02	Tweezers	
03	Loupe(10x)	
05	weighing Balance	
06	Microscope	
07	Poleriscope	
08	Rafracto Meter	

3. List of consumables		
S. No	Name of Items	Quantity/Volume
01	Rafracto Meter liquid	
02	Gemstone sample	



ASSESSMENT MATERIAL

EVIDENCE GUIDE

Qualification

Gemology

CS Code: 0214G&J4 E

Level: 03

Credit: 12

Version: 01

PERFORM COLOR STONE GRADING (other than Diamond)

CONTENTS

1. Assessment Summary and Record
2. Candidate Assessment
3. Assessor Judgment Guide
4. List of required tools/ equipment, material and context of assessment

ASSESSMENT AND ASSESSOR DETAILS

Competent

Not Yet Competent

Assessment

Re-Assessment

Assessor's Name:

Assessor's Code

Assessor's Signature..... Date

DD		MM		YYYY					

CANDIDATE DETAILS

Candidate's Name:

..... First Name Last Name

Father's Name

.....

Institute Name and District

.....

CNIC/ BFORM #

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Registration Number issued by Assessment Body

.....

Gender

Male Female Transgender

Candidate's 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's Signature:

ASSESSMENT RESULTS SUMMARY FORM

You can use this cover sheet as an *Assessment Results Summary Form*. Simply post a photocopy of this completed coversheet to NAVTTC

NAVTTC OFFICE ONLY

1. DATE FORM RECEIVED:

DD		MM		YYYY					

2. DATE ENTERED INTO DATABASE:

DD		MM		YYYY					

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM COLOR STONE GRADING (other than Diamond)		
Practical Skill Demonstration	✓	✓		✓	<ul style="list-style-type: none"> Perform role play for Perform Color Stone Grading (other than Diamond) 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your Assessor may have during the practical assessment 		
Other Requirement					<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name:..... Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to perform within **150 Minutes** timeframe:

- **PERFORM A ROLE PLAY TO DEMONSTRATE, PERFORM COLOR STONE GRADING (OTHER THAN DIAMOND):**
 - ✓ Perform Color Grading
 - ✓ Perform Clarity Grading
 - ✓ Perform Cut Grading
 - ✓ Perform Weight 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
<p>1. Complete practical task in Perform Color Stone Grading (other than Diamond)</p>	<p>During Practical assessment under observation by an assessor, I will correctly carry out the following task.</p> <ul style="list-style-type: none"> ● PERFORM COLOR GRADING <ul style="list-style-type: none"> ✓ Identify Hue (Body color) of stone ✓ Identify tone of stone ✓ Identify saturation of stone ✓ Record stone's color ● PERFORM CLARITY GRADING <ul style="list-style-type: none"> ✓ Check clarity with the help of loupe and tweezers ✓ Observe the inclusions size ,position and relief ✓ Record the clarity type ● PERFORM CUT GRADING <ul style="list-style-type: none"> ✓ Identify the cut ✓ Check the cut symmetry ✓ Check the proportion ✓ Check the blemishes and observe polish quality ✓ Record the cut grade ● PERFORM WEIGHT GRADING <ul style="list-style-type: none"> ✓ Adjust weighing balance and take the weight of the Gemstone
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

3

ASSESSOR JUDGMENT GUIDE

Candidate's Name: Father's Name:

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task in performing Perform Color Stone Grading (other than Diamond) under observation by an assessor, including:	During a practical assessment under observation by and assessor, the candidate correctly carried out the following tasks:			
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			

<p>2. Answer any questions their Assessor may have during the practical assessment</p>	<p>Candidate answers to questions are correct and demonstrate Understanding of the topics and their application.</p> <p><i>Assessor to document all questions asked and candidate Answers below. Use extra sheets if required and attach.</i></p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> Context of the assessment List of required tools and equipment. List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment

2. List of tools and equipment required		
S. No	Name of Items (tools and equipment)	Quantity
01	Light source	
02	Tweezers	
03	Loupe(10x)	
04	Weighing Balance	

3. List of consumables		
S. No	Name of Items	Quantity/Volume
01	Gemstone sample	
02		
03		



ASSESSMENT MATERIAL

EVIDENCE GUIDE

Qualification

Gemology

CS Code: 0214G&J4 F

Level: 03

Credit: 12

Version: 01

PERFORM DIAMOND GRADING

CONTENTS

- 1. Assessment Summary and Record
- 2. Candidate Assessment
- 3. Assessor Judgment Guide
- 4. List of required tools/ equipment, material and context of assessment

ASSESSMENT AND ASSESSOR DETAILS

Competent

Not Yet Competent

Assessment

Re-Assessment

Assessor's Name:

Assessor's Code

Assessor's Signature.....Date

DD		MM		YYYY					

CANDIDATE DETAILS

Candidate's Name:

..... First Name Last Name

Father's Name

.....

Institute Name and District

.....

CNIC/ BFORM #

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Registration Number issued by Assessment Body

.....

Gender

Male Female Transgender

Candidate's 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's Signature:

ASSESSMENT RESULTS SUMMARY FORM

You can use this cover sheet as an Assessment Results Summary Form. Simply post a photocopy of this completed coversheet to NAVTTC

NAVTTC OFFICE ONLY

1. DATE FORM RECEIVED:

DD		MM		YYYY					

2. DATE ENTERED INTO DATABASE:

DD		MM		YYYY					

1

ASSESSMENT SUMMARY & RECORD

Candidate's Name:..... Father's Name:.....

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF COMPETENCY STANDARD: PERFORM DIAMOND GRADING		
Practical Skill Demonstration	✓	✓		✓	<ul style="list-style-type: none"> Perform role play for Perform Diamond Grading 		
Knowledge Assessment	✓	✓			<ul style="list-style-type: none"> Answer any questions your Assessor may have during the practical assessment 		
Other Requirement					<ul style="list-style-type: none"> NA 		

2

CANDIDATE ASSESSMENT

Candidate's Name:..... Father's Name:.....

ALL WORK ASSESSED IN THIS COMPETENCY STANDARD MUST BE YOUR OWN WORK.

GUIDANCE TO CANDIDATE

To meet this standard you are required to perform within **3 Hours** timeframe:

- **PERFORM A ROLE PLAY TO DEMONSTRATE , PERFORM DIAMOND GRADING :**
 - ✓ Perform Color Grading
 - ✓ Perform Clarity Grading
 - ✓ Perform Cut Grading
 - ✓ Perform Weight 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
<p>1. Complete practical task in Perform Diamond Grading</p>	<p>During Practical assessment under observation by an assessor, I will correctly carry out the following task.</p> <ul style="list-style-type: none"> ● PERFORM COLOR GRADING <ul style="list-style-type: none"> ✓ Check stone under light ✓ Identify color of diamond with master samples or color chart ✓ Record the color ● PERFORM CLARITY GRADING <ul style="list-style-type: none"> ✓ Check clarity with the help of loupe and tweezers ✓ Observe the inclusions on basis of size, position and relief ✓ Check the clarity type with clarity chart ✓ Record the clarity grade ● PERFORM CUT GRADING <ul style="list-style-type: none"> ✓ Identify the cut ✓ Check the cut symmetry ✓ Check the proportion ✓ Check the blemishes and observe polish quality ✓ Record the cut grade ● PERFORM WEIGHT GRADING <ul style="list-style-type: none"> ✓ Arrange and adjust weighing balance ✓ Take stone's weight in carat ✓ Record the carat weight
<p>2. Answer any questions your Assessor may have during the practical assessment</p>	<p>My answers to questions are correct and demonstrate my understanding of the topics and their application:</p>

3

ASSESSOR JUDGMENT GUIDE

Candidate's Name: Father's Name:

INSTRUCTIONS FOR ASSESSOR

This section contains minimum evidence requirements. Oral questioning may be used to clarify candidate understanding of the topic and its application.

ACTIVITIES	MINIMUM EVIDENCE REQUIRED	YES	NO	ASSESSOR COMMENTS
1. Complete practical task in performing Perform Diamond Grading under observation by an assessor, including: Perform Color Grading	During a practical assessment under observation by and assessor, the candidate correctly carried out the following tasks:			
	Identify Check stone under light Identify color of diamond with master samples or color chart Record the color			
Perform Clarity Grading	Check clarity with the help of loupe and tweezers			
	Observe the inclusions on basis of size, position and relief			
	Check the clarity type with clarity chart			
	Record the clarity grade			
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	Arrange and adjust weighing balance			
	Take stone's weight in carat			
	Record the carat weight			

<p>2. Answer any questions their Assessor may have during the practical assessment</p>	<p>Candidate answers to questions are correct and demonstrate Understanding of the topics and their application.</p> <p><i>Assessor to document all questions asked and candidate Answers below. Use extra sheets if required and attach.</i></p>			
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4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

INSTRUCTIONS	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1. Context of Assessment	This task will be performed in real time environment

2. List of tools and equipment required		
S. No	Name of Items (tools and equipment)	Quantity
01	Light source	
02	Tweezers	
03	Weighing Balance	
04	Gemstone master sample or color chart	
05	Microscope	
06	Loupe	

3. List of consumables		
S. No	Name of Items	Quantity/Volume
01	Stone	



ASSESSMENT MATERIAL	<h1 style="margin: 0;">GEMOLOGY</h1>
EVIDENCE GUIDE	
Qualification code: 0214G&J4 Level: 03 Credit: 80 Version: 1	

CONTENTS	1. Assessment Summary and Record 2. Candidate Assessment 3. Assessor Judgment Guide 4. List of required tools/ equipment, material and context of assessment
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ASSESSMENT AND ASSESSMENT PANEL DETAILS	Competent <input type="checkbox"/> Not Yet Competent <input type="checkbox"/>												
	Assessment <input type="checkbox"/> Re-Assessment <input type="checkbox"/>												
	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 _____													
	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> DD MM YYYY												

CANDIDATE DETAILS	Candidate Name: _____
	Father Name: _____ <small style="display: block; text-align: center; margin: 0;">First Name Last Name</small>
	Institute Name and District: _____
	CNIC # _____ OR Registration Number: _____
	Gender: Male <input type="checkbox"/> Female <input type="checkbox"/>
	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 <i>Assessment Results Summary Form</i> . Simply post a photocopy of this completed coversheet to NAVTTTC
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NAVTTTC OFFICE ONLY	1. DATE FORM RECEIVED: _____ <small style="display: block; text-align: center; margin: 0;">DD MM YYYY</small>	2. DATE ENTERED INTO DATABASE: _____ <small style="display: block; text-align: center; margin: 0;">DD MM YYYY</small>
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1

ASSESSMENT SUMMARY AND RECORD

ACTIVITY	METHOD				DESIRED OUTCOMES	RESULT	
	WRITTEN	ORAL	PORTFOLIO	OBSERVATION		COMPETENT	NOT YET COMPETENT
NATURE OF ACTIVITY					DESIRED OUTCOMES FOR SUCCESSFUL ASSESSMENT OF: GEMOLOGY		
Practical final project	✓	✓		✓	Complete supplied project brief related to Gemology <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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					<ul style="list-style-type: none"> N/A 		

2

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
<p>I. Complete practical task in assessing the physical properties of gemstone</p>	<p>During Practical assessment under observation by an assessor, I will correctly carry out the following task.</p> <ul style="list-style-type: none"> • IDENTIFY COLOR OF STONE <ul style="list-style-type: none"> ✓ Identify Hue(body color) of stone ✓ Identify tone of stone ✓ Identify saturation of stone • IDENTIFY CUT OF STONE <ul style="list-style-type: none"> ✓ Identify Cut of stone ✓ Identify Symmetry cut of stone ✓ Measure the dimensions of the cut stone • ASSESS TRANSPARENCY OF STONE <ul style="list-style-type: none"> ✓ Check the transparency of stone and mark as transparent, translucent or Opaque • ASSESS THE CRYSTAL SYSTEM <ul style="list-style-type: none"> ✓ Check and identify the crystal system of stone with the help of dummy samples • PERFORM HARDNESS TEST <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ Adjust the Hydrostatic balance and calculate specific gravity of the stone. ✓ Identify the stone as per specific gravity • ASSESS CLARITY OF STONE <ul style="list-style-type: none"> ✓ Clarity type(1,2 or 3) with the help of Loupe(10x) ✓ Identify the inclusions in stone

<p>II. Complete practical task in evaluate optical properties of gemstone</p>	<ul style="list-style-type: none"> • IDENTIFY GEMSTONE WITH LIGHT SOURCE <ul style="list-style-type: none"> ✓ Adjust lighting source/ inspection lamp ✓ Observe brilliancy under light ✓ Observe Dispersion under light if any ✓ Identify the brilliancy and dispersion • IDENTIFY PHENOMENON IN STONE <ul style="list-style-type: none"> ✓ Adjust lighting source/ Inspection lamp ✓ Check phenomenon in stone if any ✓ Identify the type of phenomenon • PERFORM POLARIZATION TEST <ul style="list-style-type: none"> ✓ Arrange Polari scope ✓ Adjust the Analyzer and Polarizer ✓ Identify the stone whether single refraction, double refraction or aggregate • PERFORM PLEOCHROISM TEST <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ 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
<p>III. Complete practical task in differentiating between natural, treated, imitation and synthetic Gemstone</p>	<ul style="list-style-type: none"> • IDENTIFY NATURAL GEMSTONE ON THE BASIS OF INCLUSIONS <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ 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 <ul style="list-style-type: none"> ✓ Adjust gemological microscope ✓ Observe the Synthetic inclusions under different lighting techniques (bright, dark, reflected ,diffused) ✓ plot a sketch of inclusions as per observations

<p>IV. Complete practical task in identifying organic Gemstone</p>	<ul style="list-style-type: none"> • IDENTIFY PEARL <ul style="list-style-type: none"> ✓ Identify color and tone of Pearl ✓ Identify Luster and Shape ✓ Measure size ✓ Identify type whether Natural/ cultured • IDENTIFY CORAL <ul style="list-style-type: none"> ✓ Identify color and tone of Coral ✓ Identify Luster ✓ Identify cut ✓ Identify type whether Natural/Imitation • IDENTIFY AMBER <ul style="list-style-type: none"> ✓ Identify color and tone of Amber ✓ Identify Luster and Shape ✓ Identify cut ✓ Identify type whether Natural/Imitation • IDENTIFY OTHER ORGANIC GEMSTONE <ul style="list-style-type: none"> ✓ Identify color and tone of stone ✓ Identify Luster ✓ Identify Ivory and its imitation ✓ Identify fossils, shells etc • IDENTIFY CUT AND PERFORM WEIGHT OF STONE <ul style="list-style-type: none"> ✓ Weight the stone on weighing balance ✓ Identify the cutting style of stone
<p>V. Complete practical task in performing color stone grading (other than diamond) and in performing Diamond Grading</p>	<ul style="list-style-type: none"> • PERFORM COLOR GRADING <ul style="list-style-type: none"> ✓ Identify Hue (Body color) of stone ✓ Identify tone of stone ✓ Identify saturation of stone ✓ Record stone's color • PERFORM CLARITY GRADING <ul style="list-style-type: none"> ✓ Check clarity with the help of loupe and tweezers ✓ Observe the inclusions size ,position and relief ✓ Record the clarity type • PERFORM CUT GRADING <ul style="list-style-type: none"> ✓ Identify the cut ✓ Check the cut symmetry ✓ Check the proportion ✓ Check the blemishes and observe polish quality ✓ Record the cut grade
<p>2. Other requirements</p>	<ul style="list-style-type: none"> • NA
<p>3. Answer any questions your Assessor may have during the practical assessment</p>	<ul style="list-style-type: none"> • My answers to questions are correct and demonstrate my understanding of the topics and their application

3

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
<p>2. Answer any questions their Assessor may have during the practical assessment</p>	<p>Candidate answers to questions are correct and demonstrate understanding of the topics and their application.</p> <p><i>Assessor to document all questions asked and candidate answers below. Use extra sheets if required and attach.</i></p>			

4

LIST OF TOOLS, EQUIPMENT, MATERIAL AND CONTEXT OF ASSESSMENT

instructions	<p>This section contains information regarding;</p> <ul style="list-style-type: none"> • Context of the assessment • List of required tools and equipment. • List of consumable items required during the service
1.Context of Assessment	<p>This practical final project will be conducted in a Lapidary lab/workshop environment.</p> <p>Required tools, equipment and consumables will vary according to project brief.</p>

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	

Course: **Gemology**

Medium: پیپر اردو یا انگریزی میں حل کریں۔

Student Name: _____

Time allowed 3 hour.

Total Marks: 100

SECTION A

(10)

سوال نمبر 1: درست جوابات پر نشان لگائیں۔

True/False

- 1- There are three types of Rocks ()
2-Mineral is aggregate/mixture of rocks ()
3-Color is a kind of physical Property ()
4-Cleavage and Fracture are same ()
5-The color of mineral formed from its chemical composition or self colored is called 'Allochromatic'. ()
6-Hue is body color of the gemstone ()
7-There are 5 types of crystal system ()
8-All gemstones have same Specific Gravity ()
9-Pearl has vitreous luster ()
10-Hardness means resist to break ()

SECTION B

سوال نمبر 2: ان میں سے 10 تہ حل کریں۔

Note : Any 10

(10)

- 1-Rocks that are formed by magma
(a)Sedimentary (b)Igneous (c)Metamorphic (d)None of these
- 2-Rocks that are formed by heat and pressure
(a)Sedimentary (b) Metamorphic (c) Igneous (d)None of these
- 3-To identify a mineral /gemstone which step is necessary
(a)Taking weight (b) Physical property (c) Luster (d)None of these
- 4-Hue ,tone and saturation are parameters of
(a)Cleavage (b) Color (c)Fracture (d)All of them
- 5-Hardness is a physical property which means
(a)Resist to break (b) Durability (c) Resist to scratch (d) All of them
- 6-Luster means
(a)Brilliancy (b)Surface glow (c)Dispersion (d) None of these
- 7-Talc is
(a)Hardest (b) Softest (c)Medium (d) None of these
- 8-Corundum's hardness on moh's scale is
(a)7 (b)8 (c)9 (d)10
- 9-Beauty,Durability and rarity are main factors of
(a)rock (b)Mineral (c)Gemstone (d)None of these
- 10-The gemstone with same chemical composition created in laboratory is
(a)Natural (b)Synthetic (c)Imitation (d)Assembled
- 11-The gemstone created in laboratory that has no counterpart in nature is
(a)Natural (b)Synthetic (c)Manmade (d)Imitation
- 12-The Formation of gemstones that are formed by organisms are
(a)Inorganic (b)Organic (c) Assembled (d)All of them

SECTION C

Note: Any Two

(20)

1-Define Rock and Mineral

2-Define Gemology and Gemstone.

3-Name any 5 physical properties of gemstone, define any 2.

SECTION D

Note: Any 4, each question contains 15 marks

(60)

1-Identify hue, tone and saturation.

2-Identify any 3 Luster.

3-Identify hardness of stone with hardness pencil .

4-Identify Transparency and cut of Gemstone

5-Perform and calculate Specific Gravity of stone

The End

Course: **Gemology** 2nd Formative Assessment

Medium: پیپر اردو یا انگریزی میں حل کریں۔

Student Name: _____

Time allowed 3 hour.

Section A

(10)

- True/False T/F
- 1- Brilliancy is the called surface glow ()
- 2- In Dispersion spectrum colors are seen in gemstone ()
- 3-Hardness of calcite is 2 ()
- 4-Asterism is a kind of phenomenon ()
- 5-The color of mineral formed from its chemical composition or self-colored is called 'Idiochromatic. ()
- 6-SR means Single Ray ()
- 7- The specie of corundum is ruby and sapphire ()
- 8-SR gemstones have high birefringence ()
- 9-RI means Resistivity Index ()
- 10-Optical Property is related to the behavior of light ()

Section B

(10)

Note : Any 10

- 1-Brilliancy of Gemstone is seen under which light
- (a)Ultraviolet (b)Polarized (c) Unpolarised (d)None of these
- 2-SR,DR and aggregate stones are observed in
- (a) Telescope (b) Polari scope (c)Microscope (d)None of these
- 3-Lustre means
- (a)Internal glow (b)Rainbow colors (c)External glow (d)All of them
- 4-In microscope we differentiate natural/synthetic gemstones by observing
- (a)Color (b) Cut (c)Inclusions (d) All of them
- 5-Refractometer is used to note the . . . of gemstone
- (a)Specific Gravity (b) Durability (c) Refractive index (d) All of them
- 6-Specific gravity of corundum is
- (a)2.5 (b)3.5 (c)3.95-4.10 (d)4.9-5.9
- 7-Dispersion is the optical property that shows
- (a)Cleavage (b)Transparency (c)Brilliancy (d)Rainbow colors
- 8-Diaphaneity is known as
- (a)Chatoyancy (b)Dispersion (c)Transparency (d) All of them
- 9-Illumination in gemological microscope means
- (a)Focus (b)Zoom control (c)objective lens (d)Lighting source
- 10-Orthoclase's hardness on moh's scale is
- (a)5 (b) 6 (c) 8 (d) 4
- 11- Peridot crystallizes in
- (a)Tetragonal (b)Hexagonal (c)Orthorhombic (d)Triclinic
- 12-Under Ultraviolet light colorless diamond looks
- (a)Red (b)Orange (c)Blue (d) pink

Section C

(10)

Note: Any Two

1-What is Optical property? Name any 4, and define any 2.

2-Differentiate among Brilliancy, Luster and Dispersion

3-How would you identify SR,DR and Aggregate stones under Polari scope?

Section D

(60)

Note: Any 4 each question contains 15 marks

1-Identify Brilliancy, Luster, Phenomenon and Dispersion if any ?

2-Identify the stone whether it is SR, DR or Aggregate in Polari scope?

3-Identify Refractive Index of given gemstone?

4-Identify Fluorescence and Phosphorescence of Stone in UV light and also note pleochroism in dichroscope

5-Perform and calculate Specific Gravity of stone

The End

Course: **Gemology** 3rd Formative Assessment

Medium: پیپر اردو یا انگریزی میں حل کریں۔

Student Name: _____

Time allowed 3 hour.

Section A (10)

- | True/False | T/F |
|--|-----|
| 1- Organic gemstones are formed from nonliving things | () |
| 2-All organic gemstones are allowed to freely import worldwide | () |
| 3-Pearls are formed in polyps | () |
| 4-Corals are produced in mussels | () |
| 5-Copal is a type of inorganic gemstone | () |
| 6-Most cultured Pearls are produced in china | () |
| 7-Polyps are produced by Turtles | () |
| 8-Jet is initial form of Coal "lignite". | () |
| 9-Hardness of coral is 5 | () |
| 10-Ivory is mostly black in color | () |

Section B (10)

Note : Any 10

- 1-Organic gemstones are formed from
(a)Mineral (b)Rocks (c)Organisms (d)All of them
- 2-There are . . . main types of pearl
(a)3 (b)4 (c)5 (d)
- 3-Who First discovered /produced cultured pearl
(a)Darwin (b)William smith (c)External glow (d)All of them
- 4-A Nacreous layer inside pearl bearing mollusks shell is
(a)Nacre (b) Pearl sac (c)Mother of pearl (d)All of them
- 5-Tahitian pearls are also called
(a)White colored (b)Gray colored (c)Peacock colored (d) None of these
- 6-Coral is formed by
(a)Fish (b)Polyps (c)Bacteria (d)None of these
- 7-The hardness of amber is
(a)2 (b)2-2.5 (c)3 (d)3-5
- 8-Coral's famous and most prized color would be
(a)White (b)Black (c)Red (d)Orange
- 9-Jet is which form of Coal
(a)Peat (b)lignite (c)Bituminous (d)Anthracite
- 10-The hardness of coral is
(a)1-2 (b)2-3 (c) 3-4 (d) none of these
- 11-Ivory's teeth is composed of
(a) Calcium (b)Phosphate (c) Calcium Phosphate (d)Non of these
- 12-Under Ultraviolet light colorless diamond looks
(a)Red (b)Orange (c)Blue (d)pink

Section C (10)

Note: Any Two

1-Define organic gemstones and give any three examples.

2-Define Pearl and its two types.

3-Differnciate among Ivory, Amber and Coral.

Section D (60)

Note: Any 3 each question contains 20 marks

1-Identify Pearl type and note its specific gravity RI:

2-Identify Coral and note its specific gravity and RI:

3-Identify Amber Type and note its specific gravity:

4- Identify Jet whether it is natural imitation by taking specific gravity:

The End

Student Name: _____

Time allowed 3 hour.

Section A (10)

- True/False T/F
- 1- Alberuni described ruby's color as pomegranate ()
 - 2- The finest rubies are basalt hosted ()
 - 3- Moghok and Mong hsu are famous historical mines of Madagascar ()
 - 4- Trace elements Iron and Titanium causes red color in ruby ()
 - 5- The word sapphire means yellow color of sapphire ()
 - 6- Ceylon are one of the finest sapphires ()
 - 7- Most corundum present in the market are Heat-treated ()
 - 8- Padparacha is the most prized than ruby ()
 - 9- The Specie of Beryl is Emerald ()
 - 10- Melt processes resemble those of natural gemstones ()

Section B (10)

Note : Any 10

- 1- Which ruby can be called "pigeon's blood".
(a) Australian (b) Thai (c) Cambodian (d) Burmi
- 2- Beryl and corundum is
(a) SR (b) DR (c) Both (d) None of these
- 3- Chatoyancy is a which phenomenon
(a) Star (b) Cat's eye (c) Color change (d) All of them
- 4- In microscope we differentiate natural/synthetic gemstones by observing
(a) Color (b) Cut (c) Inclusions (d) All of them
- 5- Which sapphire has velvety effect
(a) Burma (b) Kashmir (c) Thailand (d) None of them
- 6- Specific gravity of Beryl is
(a) 2.5-2.9 (b) 2.4-2.6 (c) 2.6-2.8 (d) 2.9-3.0
- 7- Which element causes color change in sapphire
(a) Chromium (b) Vanadium (c) Iron (d) Titanium
- 8- The hardness of Emerald is
(a) 7 (b) 7-7.5 (c) 7.5-8 (d) 8-8.5
- 9- Ceylon sapphire comes from
(a) Australia (b) Cambodia (c) Madagascar (d) Sri Lanka
- 10- Hematite inclusions in black star sapphire contains how many rays
(a) 5 (b) 6 (c) 8 (d) 12
- 11- Beryl crystallizes in
(a) Tetragonal (b) Hexagonal (c) Orthorhombic (d) Triclinic
- 12- Emerald from Pakistan comes from
(a) Kharan (b) Kashmir (c) Swat (d) Mardan

Section C (10)

Note: Any Two

1-Define ruby and sapphire, varieties its sources, any 3 physical properties.

2- Define Fancy Sapphire and Emerald, its sources.

3- Define different Synthetic and Treatments any 3 ?

Section D (60)

Note: Any 3 each question contains 20 marks

1- Identify Brilliancy, Lustre, Phenomenon and Dispersion if any?

2- Identify the stone whether it is SR, DR or Aggregate in Polariscope

3- Identify Refractive Index of given gemstone.

4- Identify Fluorescence and Phosphorescence of Stone in UV light.

5-Perform and calculate Specific Gravity of stone

The End

Course: **Gemology**

Medium: پیپر اردو یا انگریزی میں حل کریں۔

Student Name: _____

Time allowed 3 hour.

Total Marks: 100

Section A

(10)

True/False

- 1- Hue is body color of Rocks T/F
- 2-Transparency is parameter of clarity ()
- 3-Color is a kind of physical Property ()
- 4-The best saturation is vivid ()
- 5-Cut is not necessary in grading stones. ()
- 6-Type 1 clarity has full of inclusions ()
- 7-There are 5 types of crystal system ()
- 8-All gemstones have same Specific Gravity ()
- 9-Type 3 clarity has none of inclusions ()
- 10-In grading weight mostly carat is used ()

Section B

(10)

Note : Any 10

1-Which one of this is considered in 4 C's

- (a) Cat's eye (b) Cabochon (c) Color (d) None of these

2-Saturation is parameter of

- (a) Color (b) Clarity (c) Cut (d) Carat weight

3-To identify a mineral /gemstone which step is necessary

- (a) Taking weight (b) Physical property (c) Luster (d) None of these

4-Hue, tone and saturation are parameters of

- (a) Cleavage (b) Color (c) Fracture (d) All of them

5-Loupe (hand lens) is used to look

- (a) Crystal structure (b) Chemical composition (c) Clarity (d) None of These

6-Luster means

- (a) Brilliance (b) Surface glow (c) Dispersion (d) None of these

7-Which type of Clarity is eye clean (none of inclusions)

- (a) Type 1 (b) Type 2 (c) Type 3 (d) None of these

8-Corundum's hardness on moh's scale is

- (a) 7 (b) 8 (c) 9 (d) 10

9-The fine quality precious gemstones are sold as per

- (a) Carat (b) Kilogram (c) Tons (d) None of these

10-The gemstone with same chemical composition created in laboratory is

- (a) Natural (b) Synthetic (c) Imitation (d) Assembled

11-1 carat is equal to

- (a)200gm (b)200 cent (c)200mg (d)200mm
12-Symmetry is analyzed in
(a)Color (b) Clarity (c) Cut (d) Carat weight

Section C (20)

Note: Any Two

- 1-Define Parameters of Color
- 2-Define various steps of Color stone grading
- 3-Name any 5 physical properties of gemstone, define any 2.

Section D (60)

Note: Attempt all ,each question contains 15 marks

1-Identify color of stone as per grading

2-Identify Clarity Type as per grading

3-Identify Cut and Symmetry of Stone as per grading

4-Perform Weight grading of stone

The End

Course: **Gemology**

Medium: پیپر اردو یا انگریزی میں حل کریں۔

Student Name: _____

Time allowed 3 hour.

Total Marks: 100

Section A (10)

True/False

- 1- Hue is body color of Rocks T/F
- 2-Transparency is parameter of clarity ()
- 3-Hardness of diamond on Moh's scale is 9.5 ()
- 4-C is the precious diamond in the diamond color grading ()
- 5-Cut is not necessary in diamond grading ()
- 6-Type 1 clarity has full of inclusions ()
- 7-There are 58 facets in round brilliant cut ()
- 8-The 4 C's are not important in Diamond grading ()
- 9-Flawless is the commercial quality Diamond ()
- 10-In Diamond grading weight mostly carat is used ()

Section B (10)

Note : Any 10

- 1-Which one of this is considered in 4 C's
(a) Cat's eye (b) Cabochon (c) Color (d) None of these
- 2-Saturation is parameter of
(a) Color (b) Clarity (c) Cut (d) Carat weight
- 3-To identify a mineral /gemstone which step is necessary
(a) Taking weight (b) Physical property (c) Luster (d) None of these
- 4-Hue ,tone and saturation are parameters of
(a) Cleavage (b) Color (c) Fracture (d) All of them
- 5-Loupe (hand lens) is used to look
(a) Crystal structure (b) Chemical composition (c) Clarity (d) None of These
- 6-Luster means
(a) Brilliancy (b) Surface glow (c) Dispersion (d) None of these
- 7-Which type of Clarity is eye clean (none of inclusions)
(a) Type 1 (b) Type 2 (c) Type 3 (d) None of these
- 8-Corundum's hardness on moh's scale is
(a) 7 (b) 8 (c) 9 (d) 10
- 9-The fine quality precious gemstones are sold as per
(a) Carat (b) Kilogram (c) Tons (d) None of these
- 10-The gemstone with same chemical composition created in laboratory is
(a) Natural (b) Synthetic (c) Imitation (d) Assembled

11-1 carat is equal to

- (a)200gm (b)200 cent (c)200mg (d)200mm

12-Symmetry is analyzed in

- (a)Color (b) Clarity (c) Cut (d) Carat weight

Section C (20)

Note: Any Two

1-Define Parameters of Color

2-Define various steps of Color stone grading

3-Name any 5 physical properties of gemstone, define any 2.

Section D (60)

Note: Attempt all ,each question contains 15 marks

1-Identify color of stone as per grading


2-Identify Clarity Type as per grading


3-Identify Cut and Symmetry of Stone as per grading

4-Perform Weight grading of stone

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