

Date: _____		Educational organization of origin: _____		
Title / Version: _____		Course Code: CHE-5061-2: Gases and Energy		
CONCEPTS AND TECHNIQUES				
General Concepts	Compulsory Concepts	Theory Part		Practical Part
		Evaluation of Competencies	Evaluation of Explicit Knowledge	
Chemical Properties of Gases	Reactivity			
	Kinetic theory of gases			
Physical Properties of Gases	General gas law			
	Ideal gas law			
	Dalton's law			
	Avogadro's hypothesis			
	Molar volume of a gas			
	Endothermic and exothermic reactions			
Energy Transfers that Occur in Reactions	Energy diagram			
	Activation energy			
	Enthalpy change			
	Molar heat of reaction			
	Relationship between thermal energy, specific heat capacity, mass and temperature variation			

CONCEPTS AND TECHNIQUES (Cont.)		
Categories of Techniques	Techniques	Practical Part Evaluation of Competencies
Laboratory Work	Safely using laboratory materials and equipment	
	Preparing solutions	
Measurement	Checking the reliability, accuracy and sensitivity of measuring instruments	
	Interpreting measurement results (significant figures, measurement errors)	

The three general concepts as well as a representative sample of compulsory concepts are evaluated throughout the entire examination which respects the requirements of the DED.	
Evaluation of competencies: <ul style="list-style-type: none"> <li>At least two general concepts are evaluated, including physical properties of gases and energy transfers that occur in reactions. For these general concepts, a representative sample of the compulsory concepts is evaluated.</li> <li>Both categories of techniques are evaluated. For both categories, at least three techniques are evaluated.</li> </ul>	
Evaluation of explicit knowledge: <ul style="list-style-type: none"> <li>At least two general concepts are evaluated. For these general concepts, priority is given to compulsory concepts that were not evaluated in the evaluation of competencies.</li> </ul>	

THEORY PART			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>GUIDE</b>			
General and compulsory concepts are clearly identified.			
The number of general concepts evaluated respects the requirements of the DED.			
For each general concept, representative samples of the compulsory concepts are evaluated.			
Provided materials:			
• Adult's Booklet			
• Correction Key			
• Guide			
• Evaluation Booklet			
Authorized materials respect the requirements of the DED.			
Duration of the examination is 2 hours.			
<b>ADULT'S BOOKLET – EVALUATION OF COMPETENCIES SECTION</b>			
1 to 3 Scenarios with 4-7 tasks (at least one task per scenario).			
The scenarios are open-ended and present a problem to be solved as well as an opinion, comparison, or choice to be made.			
Tasks are complex; they are related to the context of the scenario.			

THEORY PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>ADULT'S BOOKLET – EVALUATION OF COMPETENCIES SECTION (Cont.)</b>			
Tasks are complex, incorporating the following characteristics: <ul style="list-style-type: none"> <li>• Mobilize several concepts</li> <li>• Permit several solutions</li> <li>• Use judgment, reasoning or analysis</li> <li>• Require an opinion or a choice to be made</li> <li>• Propose a problem to be solved</li> <li>• Mobilize the 3 evaluation criteria</li> </ul>			
<b>ADULT'S BOOKLET – EVALUATION OF EXPLICIT KNOWLEDGE SECTION</b>			
The booklet comprises 3 to 8 questions.			
Questions contain minimal or no context.			
The questions are varied in form and relate to each of the first 3 levels of cognitive skill (Knowing, Understanding and Applying).			
Concepts not assessed in the evaluation of competencies section are taken into account.			

THEORY PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>ADULT'S BOOKLET GENERAL</b>			
The visual aspect is appropriate (layout, illustrations, spaces for answers, etc.).			
The methods of representation are varied (graphs, tables, texts, equations, diagrams, etc.).			
The level of difficulty is appropriate.			
Scenarios are free of stereotypes, discriminations or offensive elements.			
Content is <b>original</b> (not based on educational accounts or other materials) and is mathematically and scientifically sound.			
The appendices (tables, formulas and quantities) are complete and conform to the DED.			
Copyright:			
<ul style="list-style-type: none"> <li>• Rights have been obtained, with supporting documents clearly indicating sources (if necessary).</li> <li>• The images and texts are copyright-free; the source of each image and text is clearly indicated underneath it.</li> <li>• In the case of photos or drawings made by the authors of the exam, a letter granting copyright permission to GRICS is attached to the examination.</li> </ul>			

THEORY PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>CORRECTION KEY</b>			
Examples of appropriate responses are provided for all tasks and questions.			
Marking scales are clear.			
A total of 20 marks are allotted for the explicit knowledge section.			
<b>EVALUATION BOOKLET</b>			
The checklist contains observable actions for each criterion.			
Each observable action connects with the concepts evaluated and respects the elements of the evaluation criteria.			
The observable actions can be evaluated using the Criterion-Referenced Rubrics.			
A total of 40 marks are allotted for the evaluation of competencies section.			
<b>CONCORDANCE OF BOOKLETS</b>			
There is a concordance between all the documents: <i>Guide, Adult's Booklet, Correction Key, and Evaluation Booklet.</i>			

PRATICAL PART			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>GUIDE</b>			
The general and compulsory concepts evaluated as well as the category of techniques and the techniques are clearly identified.			
The number of categories of techniques and the techniques evaluated respects the requirements of the DED.			
The general and compulsory concepts evaluated are coordinated with the theory section.			
Provided materials:			
• Adult's Booklet			
• Correction Key			
• Guide			
• Evaluation Booklet			
Duration of the examination is 3 hours.			
A list of materials required is provided.			
If necessary, instructions for the preparation of laboratory materials are provided.			
The appendix includes a list of materials as well as the procedure to be given to the adult, if requested.			

PRATICAL PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>ADULT'S BOOKLET</b>			
The scenario is safe; safety instructions are clearly stated when needed.			
The scenario proposes at least four tasks associated with each of the four evaluation criteria.			
The template complies with the DED and the prototype examination.			
The task is complex with the following characteristics: <ul style="list-style-type: none"> <li>• Mobilizes several concepts</li> <li>• Permits several solutions</li> <li>• Proposes a problem to be solved</li> <li>• Requires the development of a laboratory report, following an outline that is provided</li> <li>• Uses judgment, reasoning or analysis</li> <li>• Mobilizes the 4 evaluation criteria</li> </ul>			
Content is <b>original</b> (not based on educational accounts or other materials) and is mathematically and scientifically sound.			
The level of difficulty is appropriate.			
Scenarios are free of stereotypes, discriminations or offensive elements.			



PRACTICAL PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>ADULT'S BOOKLET (Cont.)</b>			
The appendices (tables, formulas and quantities) are complete and conform to scientific conventions.			
Copyright:			
<ul style="list-style-type: none"> <li>Rights have been obtained; supporting documents clearly indicate sources (if necessary).</li> </ul>			
<ul style="list-style-type: none"> <li>The images and texts are copyright-free; the source of each image and text is clearly identified underneath it.</li> <li>In the case of photos or drawings made by the authors of the exam, a letter granting copyright permission to GRICS is attached to the examination.</li> </ul>			
<b>CORRECTION KEY</b>			
Examples of appropriate responses are provided for all tasks.			
<b>EVALUATION BOOKLET</b>			
The checklist contains observable actions for each criterion.			
Each observable action connects with the concepts evaluated and respects the elements of the evaluation criteria.			
The observable actions can be evaluated using the Criterion-Referenced Rubrics.			

PRACTICAL PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>EVALUATION BOOKLET (Cont.)</b>			
A total of 40 marks are allotted.			
<b>CONCORDANCE OF BOOKLETS</b>			
There is a concordance between all the documents: <i>Guide, Adult's Booklet, Correction Key, and Evaluation Booklet.</i>			