

Date: \_\_\_\_\_ School Board: \_\_\_\_\_

Title / Version: \_\_\_\_\_ Course Code: **BLG-5071-2: Reproduction and Development**

**CONCEPTS AND TECHNIQUES**

The Living World General Concepts	Compulsory Concepts	Theory Part		Practical Part
		Evaluation of Competencies	Evaluation of Explicit Knowledge	
<b>Cell division</b>	Cell cycle <ul style="list-style-type: none"> <li>• Interphase</li> <li>• Mitotic phase</li> </ul>			
	Meiosis			
	Chromosome mutation			
	Cancer			
<b>Human reproduction</b>	Reproductive system <ul style="list-style-type: none"> <li>• Human reproductive organs</li> </ul>			
	Hormonal regulation			
	Gametogenesis <ul style="list-style-type: none"> <li>• Spermatogenesis</li> <li>• Ovogenesis</li> </ul>			
	Fertilization			
	Fertility			
	Contraception <ul style="list-style-type: none"> <li>• Hormonal</li> <li>• Mechanical barrier</li> <li>• Chemical</li> </ul>			

CONCEPTS AND TECHNIQUES (Cont.)				
The Living World General Concepts	Compulsory Concepts (Cont.)	Theory Part		Practical Part
		Evaluation of Competencies	Evaluation of Explicit Knowledge	
Development	Embryonic development			
	Growth			
	Stem cells			
	Cell differentiation			
	Morphogenesis			
	Pregnancy <ul style="list-style-type: none"> <li>• Embryonic period</li> <li>• Fetal period</li> </ul>			
	Apoptosis			
Biotechnology	Prenatal diagnoses <ul style="list-style-type: none"> <li>• DNA screen testing</li> <li>• Diagnostic tests</li> </ul>			
	Medically assisted procreation			
	Intervention techniques used for reproduction mechanisms			

Categories of Techniques	Techniques (not prescribed when data are provided)	Practical Part Evaluation of Competencies
<b>Graphic language</b>	Observable drawings	
<b>Experimentation</b>	Use of laboratory materials	
	Use of observational instruments	
	Preparation of samples	

<p>The four general concepts, as well as a representative sample of compulsory concepts, are evaluated throughout the entire examination. This strategy respects the requirements of the DED.</p>	
<p>Evaluation of competencies:</p> <ul style="list-style-type: none"> <li>• Two to four general concepts are evaluated. 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>	
<p>Evaluation of explicit knowledge:</p> <ul style="list-style-type: none"> <li>• Two to three 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>			
One to three <i>scenarios</i> that involve an issue related to the reproductive system and its hormonal mechanisms, or the complications associated with cell development as well as issues related to reproductive technology. The booklet includes four to seven tasks (at least one task per scenario).			
The scenarios are open-ended and present a problem to be solved requiring explanations, taking a position, proposing solutions, justifying their position or solutions, answering questions, considering the impact of applications related to reproduction or development on societies, etc. The other section is devoted to the explicit evaluation of knowledge.			
Tasks are complex and open-ended; 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, taking a position</li> <li>• Propose explanations and justifications</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>			

PRACTICAL PART			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>GUIDE</b>			
The general and compulsory concepts evaluated are clearly identified.			
Solves a problem related to one of the following concepts:			
<ul style="list-style-type: none"> <li>Genetics</li> <li>Applied genetics</li> </ul>			
Solves the problem using one of the following methods:			
The experimental method			
<ul style="list-style-type: none"> <li>Analysis of data, which is provided</li> <li>Discussion of scientific or technological concepts</li> <li>Analysis of the results</li> <li>An answer to the problem with an explanation</li> </ul>			
OR			
The modeling approach			
<ul style="list-style-type: none"> <li>Development of a plan of action</li> <li>Carry out the plan of action</li> <li>Analysis of the results collected.</li> </ul>			
The general and compulsory concepts evaluated are coordinated with the theory section.			
Provided materials:			
<ul style="list-style-type: none"> <li>Adult's Booklet</li> <li>Correction Key</li> <li>Guide</li> <li>Evaluation Booklet</li> </ul>			



PRACTICAL PART (Cont.)				
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions	
<b>GUIDE (Cont.)</b>				
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.				
<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, incorporating the following characteristics: <ul style="list-style-type: none"> <li>• Mobilizes several concepts</li> <li>• Provides data for analysis in the experimental approach</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>				

PRACTICAL PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<b>ADULT'S BOOKLET (Cont.)</b>			
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.			
The appendices (tables, formulas and quantities) are complete and conform to the DED.			
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PRACTICAL PART (Cont.)			
Global Appreciation	Satisfactory	Revision Required	Comments and Suggestions
<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 evaluated concepts 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.			
<b>CONCORDANCE OF BOOKLETS</b>			
There is a concordance between all the documents: <i>Guide, Adult's Booklet, Correction Key, and Evaluation Booklet.</i>			