

APPLY BIOCHEMICAL TECHNIQUES

UNIT CODE: APB/OS/AB/CR/11/6/A

UNIT DESCRIPTION

This unit specifies the competencies required to apply biochemical techniques. It involves determining classification of bio-molecules and carrying out separation and qualitative analysis of bio-molecules. It also involves determining metabolism of bio-molecules and applying enzymology.

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT These describe the key outcomes which make up workplace function (to be stated in active)	PERFORMANCE CRITERIA These are assessable statements which specify the required level of performance for each of the elements (to be stated in passive voice) <i>Bold and italicized terms are elaborated in the Range</i>
1 Determine classification of bio-molecules	1.1 <i>Classification of bio-molecules</i> is carried out as per international scientific standards 1.2 <i>Types of biomolecules</i> is determined as per international scientific standards.
2 Carry out separation and qualitative analysis of bio-molecules	2.1 <i>Separation of biomolecules</i> is carried out based on laboratory procedures. 2.2 <i>Qualitative analysis of biomolecules</i> is carried out as per international scientific standards.
3 Determine metabolism of bio-molecules	3.1 Carbohydrates metabolism is determined as per laboratory procedures. 3.2 Proteins metabolism is determined as per laboratory procedures 3.3 Lipids metabolism is determined as per laboratory procedures
4 Apply enzymology	4.1 <i>Models on mechanism of enzyme action</i> are demonstrated as per laboratory procedures. 4.2 <i>Factors affecting enzyme action</i> is demonstrated as per laboratory procedures.

RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

VARIABLE	RANGE
Classification of bio-molecules include but are not limited to:	<ul style="list-style-type: none">• Macro biomolecules Micro biomolecules
Types of biomolecules include but are not limited to:	<ul style="list-style-type: none">• Carbohydrates• Lipids• Proteins• Nucleic acids
Separation of biomolecules include but are not limited to:	<ul style="list-style-type: none">• Chromatography• electrophoresis
Qualitative analysis includes but is not limited to:	<ul style="list-style-type: none">• Reducing sugars/Benedict's test• Iodine test• Translucent test• Biurets test
Models on mechanism of enzyme action include but are not limited to:	<ul style="list-style-type: none">• Lock and key• Induced fit
Factors affecting enzyme action include but are not limited to:	<ul style="list-style-type: none">• Temperature• pH• Enzyme concentration• Substrate concentration

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit of competency.

Required Skills

The individual needs to demonstrate the following skill

- Communication
- Interpersonal
- Analytical
- Critical thinking

- Problem solving
- Creativity
- Observation

Required Knowledge

The individual needs to demonstrate knowledge of:

- Cytological techniques
- Histological techniques
- Specimen collection methods
- Storage of specimens
- Biology
- Chemistry
- Mathematics

EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge and range.

<p>1 Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Carried out classification of bio-molecules 1.2 Determined types of biomolecules 1.3 Carried out separation of biomolecules 1.4 Carried out qualitative analysis of biomolecules 1.5 Determined carbohydrates, proteins and lipids metabolism 1.6 Demonstrated models on mechanism of enzyme action 1.7 Demonstrated factors affecting enzyme action</p>
<p>2 Resource Implications</p>	<p>The following resources should be provided:</p> <p>2.1 Well-equipped biology laboratory facility 2.2 Science laboratory procedures manual 2.3 Laboratory reagents and chemicals 2.4 PPEs</p>
<p>3 Methods of Assessment</p>	<p>Competency in this unit may be assessed through:</p> <p>3.1 Oral 3.2 Written 3.3 Observation 3.4 Third party 3.5 Practical test</p>

4 Context of Assessment	Competency may be assessed on the job, off the job or a combination of these. Off the job assessment must be undertaken in a closely simulated workplace environment.
5 Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

easytvvet.com