

**051106T4APB**

**APPLIED BIOLOGY LEVEL 6**

**APB/OS/AB/CR/04/6**

**Apply Herbarium, Museum, Aquarium and Vivarium Techniques**

**November/December 2025**



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION  
COUNCIL (TVET CDACC)**

**WRITTEN ASSESSMENT**

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**INSTRUCTIONS TO CANDIDATE**

1. This paper consists of **TWO** sections: **A** and **B**.
2. Attempt **ALL** questions in section A and **ANY THREE** (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet.
5. Do not write on the question paper.

**This paper consists of THREE (3) printed pages**

**Candidates should check the question paper to ascertain that all  
pages are printed as indicated and that no questions are missing.**

## SECTION A (40 MARKS)

*Attempt ALL questions in this section.*

1. Proper classification is essential in herbarium work. Outline FOUR reasons why correct classification is important in herbarium. (4 Marks)
2. Preservation agents play a critical role in protecting artifacts, specimens, and exhibits from physical, chemical, and biological deterioration. Identify FOUR preservation agents used in museum work. (4 Marks)
3. Aquarium plants can be classified as floating, submerged, or marginal, depending on how they grow in the water. State FOUR advantages of live plants in an aquarium. (4 Marks)
4. Drying plant specimens before preservation is a fundamental step in herbarium and botanical studies. Highlight FOUR reasons why plant specimens are dried before preservation. (4 Marks)
5. Breeding fish involves controlled reproduction to produce healthy and viable offspring. Identify FOUR methods used in breeding fish. (4 Marks)
6. Methods used for harvesting depend on \_\_\_\_\_, the size of the water body, and the purpose of harvest. Highlight FOUR appropriate harvesting methods for fish. (4 Marks)
7. Constructing a vivarium requires careful \_\_\_\_\_ to ensure the health, safety, and well-being of the organisms it houses. List FOUR factors to consider when constructing a vivarium. (4 Marks)
8. Herbarium is a collection of preserved plant specimens that are systematically arranged and stored for study. Outline FOUR functions of a herbarium. (4 Marks)
9. Failure to maintain suitable environmental conditions can lead to poor health, abnormal behavior, or even death of vivarium organisms. State FOUR environmental factors to control in a vivarium. (4 Marks)
10. Preservation of specimens is a critical practice in herbarium, aimed at maintaining specimens in a stable condition. List FOUR chemicals used in the preservation of herbarium specimens. (4 Marks)

**SECTION B (60 MARKS)**

***Attempt ANY THREE (3) questions in this section.***

11.

- a) Pressing fresh plant specimens is a fundamental step in preparing herbarium specimen for long-term preservation. Describe the procedure for pressing fresh plant specimens. (10 Marks)

- b) Fish mortality in an aquarium is a common challenge faced by hobbyists and aquaculture practitioners. Discuss FIVE possible causes of fish mortality in an aquarium. (10 Marks)

12.

- a) Algae growth in an aquarium is a common issue that can affect both the aesthetic appeal and the health of aquatic life. Explain FIVE ways of controlling algae growth in an aquarium. (10 Marks)

- b) Understanding causes of specimen deterioration is crucial for implementing effective measures to protect and maintain herbarium specimens. Describe FIVE common causes of deterioration of herbarium specimen (10 Marks)

13.

- a) Controlling pests in museum collections is a critical aspect of preserving valuable and often irreplaceable artifacts, specimens, and documents. Explain FIVE methods used to control pests in museum collections. (10 Marks)

- b) When selecting a site for fish pond construction, several key factors need to be considered to ensure the pond is sustainable. Explain FIVE factors to consider when selecting a site for fish pond construction. (10 Marks)

14.

- a) Feeding is a critical aspect of fish farming because it directly affects growth, health, and overall productivity of the fish. Describe FIVE feeding methods used in fish farming. (10 Marks)

- b) When collecting plant specimens for herbarium purposes, certain precautions are important to ensure the specimen's scientific value and longevity. Explain FIVE precautions to take when collecting plant specimens for herbarium. (10 Marks)

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