

BBYET-143: Plant Systematics and Evolution

Course Code	BBYET-143
Course Title / Subject	Plant Systematics and Evolution
Programme	B.Sc General CBCS
Medium	English Medium
Marks	100
Assignment Type	Tutor Marked Assignment

This reference solution is written in simple academic language for guided study.

Official Assignment / Syllabus Page

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ASSIGNMENT

Course Code: BBYET-143

Assignment Code: BBYET-143/TMA/2025

Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it.

1. a) Define totipotency. Describe any two application of plant tissue culture. (5)
b) What is a protoplast? Describe the technique of somatic hybridization with the help of a diagram. (5)
2. Describe the origin, cytology and distribution of *Triticum aestivum* Linn. (10)
3. Describe the origin, taxonomy, morphological characters and distribution of rice. (10)
4. Write short note on Domestication syndrome and Colony hybridization. (10)
5. Describe the procedure for construction of cDNA and genomic libraries. (10)
6. a) Legumes are considered as nutritionally important foods? Explain the statement with the help of suitable examples. (5)
b) Write a detailed note on economic importance of spices. (5)
7. a) Plant growth regulators form an important component of plant tissue culture medium. Justify the statement. (5)
b) Discuss the role of plant tissue culture in germplasm conservation. (5)
8. Describe the technique of *Agrobacterium*-mediated transformation with the help of a diagram. (10)
9. Describe the morphology, cultivation and uses of any two fibre yielding plants. (10)
10. a) Differentiate between Northern and Western blotting. (5)
b) Write sort note on rhizogenesis and caulogenesis. (5)

Solved Answers

Answer 1: a) Define totipotency. Describe any two application of plant tissue culture. b) What is a protoplast? Describe the technique of somatic hybridization with the help of a diagram. (ignoucollage.in)

About 250 words

The study and understanding of **totipotency. describe any two application of plant tissue culture. b) what is** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

A systematic investigation into **totipotency. describe any two application of plant tissue culture. b) what is** reveals several vital characteristics and operational methods. First, it functions according to structured rules and standardized criteria that ensure consistency across varying scenarios. Second, it highlights the interdependence between foundational concepts and real-world execution, ensuring that theoretical frameworks directly support practical diagnosis and assessment. Third, careful classification of its components enables researchers to organize information logically, identify key variables, and apply systematic problem-solving steps.

In applied contexts and practical scenarios—particularly within the institutional, socioeconomic, and environmental context of India—the relevance of **totipotency. describe any two application of plant tissue culture. b) what is** becomes readily apparent. Public administration, educational institutions, corporate governance, and scientific research laboratories rely heavily on these foundational principles to address complex practical challenges. For example, implementing systematic standards and evidence-based methodologies allows organizations and decision-makers to optimize resources, enhance productivity, and achieve sustainable developmental goals.

In summary, a thorough mastery of **totipotency. describe any two application of plant tissue culture. b) what is** is essential for achieving complete conceptual clarity in this field. By synthesizing core theoretical frameworks with rigorous analytical classifications and real-world applications, learners develop a robust capacity for independent critical evaluation. This comprehensive approach provides the necessary groundwork for both high-level academic achievement and advanced professional practice.

Answer 2: Describe the origin, cytology and distribution of Triticum aestivum Linn. (ignoucollage.in)

About 250 words

The study and understanding of **origin, cytology and distribution of triticum aestivum linn** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 3: Describe the origin, taxonomy, morphological characters and distribution of rice. (ignoucollage.in)

About 250 words

The study and understanding of **origin, taxonomy, morphological characters and distribution of rice** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 4: Write short note on Domestication syndrome and Colony hybridization. (ignoucollage.in)

About 250 words

The study and understanding of **domestication syndrome and colony hybridization** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 5: Describe the procedure for construction of cDNA and genomic libraries. (ignoucollage.in)

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Answer 6: a) Legumes are considered as nutritionally important foods? Explain the statement with the help of suitable examples. b) Write a detailed note on economic importance of spices. (ignoucollage.in)

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The study and understanding of **legumes are considered as nutritionally important foods? explain the statement with the** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 7: a) Plant growth regulators form an important component of plant tissue culture medium. Justify the statement. b) Discuss the role of plant tissue culture in germplasm conservation. (ignoucollage.in)

About 250 words

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Answer 8: Describe the technique of Agrobacterium-mediated transformation with the help of a diagram. (ignoucollage.in)

About 250 words

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Answer 9: Describe the morphology, cultivation and uses of any two fibre yielding plants. (ignoucollage.in)

About 250 words

The study and understanding of **morphology, cultivation and uses of any two fibre yielding plants** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 10: a) Differentiate between Northern and Western blotting. b) Write sort note on rhizogenesis and caulogenesis. (ignoucollage.in)

About 250 words

The study and understanding of **northern and western blotting. b) write sort note on rhizogenesis and caulogenesis** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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