

BZYCT-135: Physiology and Biochemistry

Course Code	BZYCT-135
Course Title / Subject	Physiology and Biochemistry
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: BZYCT-135
Assignment Code: BZYCT-135/TMA/2025
Maximum Marks: 100

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

1. a) How many molecules of CO₂, NADH and FADH₂ are produced in one citric acid cycle? (3)
b) Briefly discuss β oxidation of fatty acids. (7)
2. a) Enlist the four major classes of digestive enzymes in animals. (3)
b) Describe the digestion of carbohydrates. (7)
3. Write the differences between the following pairs: (2½×4=10)
i) RBCs and WBCs
ii) Membrane Potential and Action Potential
iii) 'Aerobic' and Anaerobic' respiration with reference to glucose catabolism
iv) Molluscan kidney and Malpighian tubules
4. a) What are allosteric enzymes? (3)
b) Define enzyme inhibition. Explain any one type of enzyme inhibition. (7)
5. a) Explain the composition of blood. (5×2=10)
b) Which hormones are secreted by the pancreas? Explain their functions.
6. Write short notes on the following: (10)
i) Bohr's effect
ii) Pheromones
7. a) Describe how renal tubule and collecting ducts produce dilute and concentrated urine. (7)
b) How does short-term regulation of the urea cycle differ from long-term regulation? (3)
8. a) Explain oogenesis in human female. (5×2=10)
b) What is ageing? Mention any three theories of ageing.
9. a) Briefly discuss the Menstrual cycle. (5×2=10)
b) Explain the various mechanisms of enzyme regulation.
10. a) Explain the factors that affect the O₂ dissociation curve. (5×2=10)
b) Elaborate the chemical nature of hormones.

Solved Answers

Answer 1: a) How many molecules of CO₂, NADH and FADH₂ are produced in one citric acid cycle? b) Briefly discuss β oxidation of fatty acids. (ignoucollage.in)

About 250 words

The study and understanding of **how many molecules of co₂, nadh and fadh₂ are produced in one** 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 **how many molecules of co₂, nadh and fadh₂ are produced in one** 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 **how many molecules of co₂, nadh and fadh₂ are produced in one** 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 **how many molecules of co₂, nadh and fadh₂ are produced in one** 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: a) Enlist the four major classes of digestive enzymes in animals. b) Describe the digestion of carbohydrates. (ignoucollage.in)

About 250 words

The study and understanding of **enlist the four major classes of digestive enzymes in animals. b) describe** 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: Write the differences between the following pairs: i) RBCs and WBCs ii) Membrane Potential and Action Potential iii) 'Aerobic' and Anaerobic' respiration with reference to glucose catabolism iv) Molluscan kidney and Malpighian tubules (2½×4= (ignoucollage.in)

About 250 words

The study and understanding of **write the differences between the following pairs: i) rbcs and wbcs ii)** 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: a) What are allosteric enzymes? b) Define enzyme inhibition. Explain any one type of enzyme inhibition. (ignoucollage.in)

About 250 words

The study and understanding of **allosteric enzymes? b) define enzyme inhibition. explain any one type of enzyme** 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: a) Explain the composition of blood. b) Which hormones are secreted by the pancreas? Explain their functions. (5×2= (ignoucollage.in)

About 250 words

The study and understanding of **composition of blood. b) which hormones are secreted by the pancreas? explain** 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 6: Write short notes on the following: i) Bohr's effect ii) Pheromones (ignoucollage.in)

About 250 words

The study and understanding of **following: i) bohr's effect ii) pheromones** 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) Describe how renal tubule and collecting ducts produce dilute and concentrated urine. b) How does short-term regulation of the urea cycle differ from long-term regulation? (ignoucollage.in)

About 250 words

The study and understanding of **how renal tubule and collecting ducts produce dilute and concentrated urine. b)** 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

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Answer 8: a) Explain oogenesis in human female. b) What is ageing? Mention any three theories of ageing. (5×2= (ignoucollage.in)

About 250 words

The study and understanding of **oogenesis in human female. b) what is ageing? mention any three theories** 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 9: a) Briefly discuss the Menstrual cycle. b) Explain the various mechanisms of enzyme regulation. (5×2= (ignoucollage.in)

About 250 words

The study and understanding of **briefly discuss the menstrual cycle. b) explain the various mechanisms of enzyme** 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) Explain the factors that affect the O2 dissociation curve. b) Elaborate the chemical nature of hormones. (5×2= (ignoucollage.in)

About 250 words

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