



DEPARTMENT OF BIOCHEMISTRY
UNIVERSITY OF ILORIN, ILORIN, NIGERIA

2012/2013 B.Sc. BIOCHEMISTRY DEGREE RAIN SEMESTER
EXAMINATION

COURSE: BCH 204-GENERAL ASPECTS OF METABOLISM

CREDITS: 2

DATE: MONDAY, 3RD JUNE, 2013

TIME: 08:30 - 11:10 AM

INSTRUCTION: ANSWER ANY FOUR QUESTIONS

1. Discuss how nitrogen is recycled in nature.
2. Write exhaustively on the **THREE** distinct stages of catabolism.
- 3a. Anabolism and catabolism are not mutually exclusive. Discuss.
- b. Highlight the differences between anabolic and catabolic pathways.
- 4a. Explain the term "Intermediary Metabolism".
- b. There are basically **TWO** types of experimental models available for biochemical investigation. Discuss.
- c. A metabolic pathway can be understood at several levels. Highlight any **THREE** of these.
5. Give a comprehensive account of the processes involved in carbon-oxygen cycle.
- 6a. Using well labeled diagram, describe the utilization and recycling of carbon and oxygen in the atmosphere.
- b. Write short note on dissolved oxygen in water.

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UNIVERSITY OF ILORIN, FACULTY OF SCIENCE

DEPARTMENT OF BIOCHEMISTRY

B.Sc. (Biochemistry) 2009/2010 Rain Semester Examination Date: 22/06/2010

BCH 214: Introduction to Cellular Biochemistry Credit: 2 Time: 2hrs

ANSWER ANY FOUR QUESTIONS

1. Give an account of the hypotheses used to explain the absorption of monosaccharides in animals.
2. a) Identify the systems in the adult human body and cite FIVE examples of cell types in each of the systems.
b) Explain the term 'nuclear division'
3. a) With the aid of appropriate diagram, explain the TWO stages of meiosis.
b) Enumerate any FIVE major and FIVE minor eukaryotic organelles, stating their main functions, structure and organisms in which they are found.
4. a) Write short notes on any FIVE cell types.
b) Differentiate between meiosis and mitosis.
5. What are the methods employed in the study of the cell? Explain TWO of them in details.
6. Write notes on:
 - a) Nucleus
 - b) Endoplasmic reticulum
 - c) Mitochondrion
 - d) Lysosome

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DEPARTMENT OF BIOCHEMISTRY
UNIVERSITY OF ILORIN, ILORIN, NIGERIA
2011/2012 B. Sc. BIOCHEMISTRY DEGREE RAIN SEMESTER
EXAMINATION

Course: BCH 204 – General Aspects of Metabolism

Credits: 2

Date: Monday, 18th June, 2012

Time Allowed: 2 hours

INSTRUCTION: Answer Any Four Questions

1. With the aid of a diagram, explain the biochemical steps of the Calvin cycle.
2. Nitrogen cycle is the process by which nitrogen is converted between its various chemical forms and these transformations can be carried out by both biological and non-biological means. Explain.
3. (a) What is the rationale behind substantiating the cell as the fundamental unit of life in biochemical studies.
(b) Highlight three levels at which a metabolic pathway can be understood.
(c) Describe the two types of experimental model employed in biochemical investigations.
4. Describe the following experimental methods for studying metabolism:
 - (i) Isotopic labeling
 - (ii) Metabolic inhibition
 - (iii) Mutation
 - (iv) Isolation of substrates and enzymes
5. (a) With the aid of appropriate pathways, briefly discuss the following terms:
 - (i) Amphibolic pathway
 - (ii) catabolism
 - (iii) Anabolism
 - (iv) Metabolism
(b) Anabolism and catabolism are not mutually exclusive. Discuss.
(c) The pathways of catabolism converge to a few end products. Discuss the three stages with the aid of a diagram.
6. (a) Anabolic pathways diverge into varieties of biomolecules. Expatriate.
(b) Corresponding pathways of catabolism and anabolism differ at specific points. Cite examples and illustrate such sites in both processes with a single pathway.
(c) In a tabular form, differentiate between anabolism and catabolism.

UNIVERSITY OF ILORIN, ILORIN, NIGERIA
2010/2011 B. Sc. BIOCHEMISTRY DEGREE RAIN SEMESTER
EXAMINATION

Course: BCH 204 – General Aspects of Metabolism

Credits: 2

Date: Wednesday, 18th May, 2011

Time Allowed: 2 hrs

INSTRUCTION: Answer Any Three Questions

1. (a) Highlight the main stages in both catabolic and anabolic pathways.
(b) Describe the amphibolic nature of the TCA cycle.
2. With the aid of reductive pentose phosphate cycle, describe how CO_2 is assimilated into organic compounds.
3. Write short notes on the following processes of the nitrogen cycle:
 - (a) Biological nitrogen fixation
 - (b) Nitrification
 - (c) Assimilation of ammonia into glutamate
4. (a) What is intermediary metabolism?
(b) Explain the use of isotopes in the study of intermediary metabolism.