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OBAFEMI AWOLOWO UNIVERSITY, ILE - IFE, NIGERIA.  
FACULTY OF SCIENCE  
DEPARTMENT OF MICROBIOLOGY

**B.Sc. (Microbiology) Degree Examination.**

**SEMESTER:** Harmattan 2010/2011 Session

**COURSE CODE:** MCB 201

**COURSE TITLE:** Introductory Microbiology I

**INSTRUCTION:** Answer all questions with each section in a separate booklet.

**Date:** 18<sup>th</sup> July, 2011

**Time allowed:** 2½ hours

**SECTION A**

- 1(a) What are growth factors? List 3 categories of growth factors required by microorganisms and their uses.  
(b) Define Transformation. Show by annotated diagram how bacterium susceptible to the effect of ampicillin could be transformed into a resistant strain.  
(c) What are psychrophiles, mesophiles and thermophiles?
- 2(a) Define syntrophism. Give an example between two named microorganisms that exhibit syntrophism.  
(b) What are phototrophs, chemotrophs and lithotrophs?

**SECTION B**

- 3(a) Write briefly on the contribution of the following scientists to the development of Microbiology:  
(i) Robert Koch (ii) Louis Pasteur  
(iii) Antony von Leeuwenhoek (iv) John Tyndall  
(b) With suitable drawings, explain the different forms in which bacteria can exist.
- 4(a) What is a capsid?  
(b) Explain types of capsid symmetry that exist in viruses.  
(c) Discuss briefly the nutritional methods in fungi.

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**SECTION C**

- 5(a) What is phosphorylation?  
(b) List the three mechanisms of phosphorylation used by microorganisms to generate ATP from ADP.  
(c) Differentiate between catabolism and anabolism.  
(d) With the aid of diagram only, show the catabolism of carbohydrate indicating respiration and fermentation processes.
- 6(a) With the aid of a schematic diagram **only**, show the biosynthesis of simple lipids.  
(b) Briefly write on the primary role of lipids in bacteria cells.  
(c) Briefly discuss the mechanism of action of microbial control agents on microorganisms.

DAA/MKB/BOO

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