FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SCHOOL OF LIFE SCIENCES
DEPARTMENT OF MICROBIOLOGY

SECOND SEMESTER EXAMINATION 2014/2015 SESSION

COURSE CODE: MCB 323
COURSE TITLE: MICROBIAL PHYSIOLOGY AND METABOLISM (3 UNITS)
CLASS: 300 LEVEL
Instruction: Answer ANY FOUR Questions

1. Define the following terms:
   (i) Microbial Growth
   (ii) Generation Time
   (iii) Culture Medium
   (iv) Capnophiles
   (v) Differential Media
   (vi) Pure Culture
   (vii) Autotrophs
   (viii) Alkaliphiles
   (ix) Psychrotrophs
   (x) Hyperthermophiles

2. Explain what happens when a bacterial culture is inoculated into a liquid growth medium.

3(a). (i). What is electron transport?
   (ii). List the three principal ways by which ATP is generated via electron transport.
3(b). Describe the tricarboxylic acid cycle in microbes using annotated diagram.

4(a). With named examples, list the five types of reaction observed in pyruvate pathway.
4(b). (i). Distinguish between sense and non sense codes
   (ii). Enumerate the steps in protein synthesis in prokaryotes.

5(a). Write short notes on the following:
   (i) Halophiles
   (ii) Halotolerant
   (iii) Psychrophiles
   (iv) Mesophiles
   (v) Thermophiles
5(b). Describe the mechanism of UV cell damage

6(a). Describe with the aid of diagram the five types of oxygen-relationship seen in microorganisms
6(b). Discuss how microorganisms survive oligotrophic environments.