



ELIZADE UNIVERSITY, ILARA-MOKIN, ONDO STATE, NIGERIA

**FACULTY OF BASIC & APPLIED SCIENCES
DEPARTMENT OF BIOLOGICAL SCIENCES
SECOND SEMESTER EXAMINATION
2016/2017 ACADEMIC SESSION**

COURSE CODE: MCB 202

COURSE TITLE: GENERAL MICROBIOLOGY II

DURATION: 2HOURS

HOD'S SIGNATURE

NAME:.....MAT.No:.....

**INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND TWO (2)
QUESTIONS FROM SECTION B.**

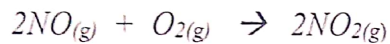
Mcb 202 18/17

SECTION A

1. a). Define the following:

- i. Bioenergetics
- ii. Biological thermodynamics
- iii. Redox reaction
- iv. Redox standard potential

b) Calculate the free energy change (ΔG) at 17°C for the following reaction



Where:

$$\Delta H = -120\text{kJ}$$

$$\Delta S = -150 \text{ JK}^{-1}$$

2. a) Mention the classes of enzymes that you know

b) With the aid of a suitable diagram, describe the mechanism of enzyme reaction under the following models

- i. Lock and fit model
- ii. Induced fit model

SECTION B

1. (a) What is binomial nomenclature of microorganisms?

(b) Differentiate between taxonomy and systematics

2. (a) List four (4) methods used in determination of microbial taxonomy and phylogeny.

(b) Explain in details any two (2) of the methods listed above.

3. (a) Define microbial biofilm and microbial mats.

(b) List the differences between microbial biofilm and microbial mats in a tabular form.