ILARA-MOKIN, ONDO STATE
DEPARTMENT OF PHYSICAL AND CHEMICAL SCIENCES
2018/2019 FIRST SEMESTER B.Sc. DEGREE EXAMINATIONS
BCH 415: PROCESS BIOCHEMISTRY

NSTRUCTIONS: ANSWER ALL QUESTIONS **TIME: 2 HOURS**

SECTION A

1. a. Describe the steps involved in dry mill ethanol production using appropriate illustration **(8 marks)**
   b. List media for recovering anaerobes **(3 marks)**
   c. Describe single cell protein and its advantages **(2 marks)**
   d. Describe the industrial production of red, white, rose and sweet wine **(7 marks)**

2. a. Discuss the classification of anaerobic bacteria **(4 marks)**

   b. List two examples each of (i) non-sporulating gram negative bacilli (ii) non-sporulating gram positive bacilli and (iii) Anaerobic cocci (gram positive) **(6 marks)**

   c. Using appropriate illustration, explain how different microorganism anaerobically ferment glucose to yield useful organic solvents **(4 marks)**
   d. Discuss antibiotic production in the context of "industrial production techniques" and "strain used for production" **(6 marks)**

3. a. Discuss anaerobic fermentation as well as pathways for ethanol and lactate production **(5 marks)**
   b. Describe types of anaerobes **(5 marks)**
   c. Discuss anaerobic systems for cultivation and illustrate any three **(10 marks)**

4 a. Describe a typical biomass **(2 marks)**
   b. Describe using an appropriate illustration, a biochemical pathway explaining methanogenesis **(5 marks)**
   c. Mention five applications of microbes in agriculture **(3 marks)**
   d. Define methanogens and list five industrial importance of methanogens **(5 marks)**
   e. List five pharmaceuticals stating the microbes they are obtained from **(5 marks)**