ILARA-MOKIN, ONDO STATE

DEPARTMENT OF PHYSICAL AND CHEMICAL SCIENCES

2020/2021 FIRST SEMESTER B.Sc. DEGREE EXAMINATIONS

BCH 415: PROCESS BIOCHEMISTRY

HOD's SIGNATURE

INSTRUCTIONS: ANSWER ANY THREE QUESTIONS **TIME: 2 HOURS**

1. a. List the steps involved in dry mill ethanol production **(5 marks)**

   b. Describe the industrial production of cheese, bread and yoghurt **(15 marks)**

2. a. Describe the biochemical pathways for ethanol and lactate production **(5 marks)**

   b. Using an appropriate illustration and a brief description, explain the process of ethanol production from corn kernel in a typical dry mill process **(15 marks)**

3. a. Mention at least five (**5**) examples of anaerobic respiration using different electron acceptors focusing on the respiration types, electron acceptor, product, organisms and examples (provide your answers in tabular form) **(10 marks)**

   b. List the anaerobic systems for cultivation of anaerobic bacteria **(5 marks)**

   c. List the types of anaerobes with examples **(5 marks)**

4. a. Define methanogens and mention at least three (3) industrial importance of it **(5marks)**

   b. Briefly discuss "cellulose and its industrial importance" **(5 marks)**

   c. Briefly describe the following:

   (i.) gasification (ii.) pyrolysis (iii.) combustion (iv.) fermentation **(10 marks)**

5. a. Using an appropriate illustration, describe the production of useful fermentation and commercial products by the glycolytic action of bacteria **(15 marks)**

   b. List the media for recovering anaerobes **(5 marks)**