ELIZADE UNIVERSITY, ILARA-MOKIN,NIGERIA

FACUTY: BASIC & APPLIED SCIENCES

DEPARTMENT: BIOLOGICAL SCIENCES

FIRST SEMESTER EXAMINATION

2019/2020 ACADEMIC SESSION

COURSE CODE: BTH 303

COURSE TITLE: INDUSTRIAL BIOTECHNOLOGY

DURATION: 2 hours

HOD's SIGNATURE

NAME:.....

MAT. No:.....

INSTRUCTIONS: Answer any four questions

All questions carry equal marks

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1. Consider yourself the production manager of a microbial enzyme production company; explain in details the steps you will undertake in production and purification of a named enzyme.

15 marks

2. Industrial fermentation processes are used to produce valuable materials via microbial activities. Explain what (a) and (b) mean, how they are produced and reasons for their synthesis at a point in the microbial life:
    a. Primary metabolites
    b. Secondary metabolites

15 marks

3. Describe in details how aseptic inoculation of microorganisms and product sampling is done in batch fermentation process. Use relevant diagrams and flow chart to support you claims.

15 marks

4. Industrial biotechnology requires cultivation of isolated microorganisms in a controlled environment;
    a. What is the scientific name of the controlled environment?
    b. Name three (3) examples of your answer in (a) above
    c. State two (2) advantages and disadvantages of (b)

15 marks

5. Microbes metabolize nutrients via different glycolytic pathways before synthesizing products;
    a. Sketch Entner-Duodorf pathway (EMP)
    b. Mention other two (2) glycolytic pathways

15 marks

6. Write short notes on the following:
    a. Aeration
    b. Mixing
    c. Temperature
    d. pH
    e. foam control

15 marks