

FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI
SCHOOL OF PHYSICAL SCIENCES
DEPARTMENT OF SCIENCE LABORATORY TECHNOLOGY
HARMATTAN SEMESTER EXAMINATION 2014/2015 SESSION
STM 501: INDUSTRIAL MICROBIOLOGY AND BIOTECHNOLOGY 1
DATE:14/04/2015 TIME ALLOWED: 3 HOURS
INSTRUCTION: ANSWER ANY FIVE (5) QUESTIONS

- 1a. Discuss the role of precursors and inhibitors in the optimization of fermentation processes.
- b. Why is barley grain preferred as a carbon and energy source to maize grain in the industrial production of beer?

- 2a. Discuss in details, the processes of optimization of industrial fermentation Medium.
- b. Briefly explain how a nitrogen source can be used to influence a fermentation pattern.

- 3a. Write an essay on adequate screening methods for industrial microorganisms.
- b. Enumerate twelve (12) microbial products of importance to man.

4. Explain strain improvement by manipulation of the genetic apparatus of industrial microorganisms.

- 5a. Outline the reasons for inoculum development.
- b. Discuss the requirements to ensure successful inoculum development.

- 6a. Advance reasons for collection and presentation of cultures.
- b. Describe four (4) methods of culture preservation. State the advantages and disadvantages of each method.

7. As a stakeholder in industrial microbiology, how can you advice an industrialist in setting up a brewery industry in a very competitive economy?