



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF

MASTER OF SCIENCE IN BIOTECHNOLOGY

SBC 834: INDUSTRIAL BIOTECHNOLOGY

DATE: Friday, 12th May 2017

TIME: 9.00 a.m. - 12.00 p.m.

INSTRUCTIONS:

SECTION A: Answer all questions (5 marks each)

1. Explain the continuous growth of bacterial cells in culture (the chemostat).
2. Discuss the diversity of marine microbes that have potential for industrial application.
3. Describe the different types of solid substrate bioreactors.
4. Discuss the major steps in downstream processing for product recovery after bioreactor processes.
5. Describe the role of Microbes in the Production of Dyes and Pigments.
6. Describe isoprenoid biosynthesis engineering in microbial systems.
7. Explain the core features of batch fermentation.
8. Briefly explain the common media applied for microbial industrial fermentations.

SECTION B: Answer any THREE questions (20 marks each)

1. Discuss the types of submerged microbial bioreactors commonly used in industrial applications.
2. Discuss the principles and application of commercial production of ethanol and acrylamide.
3. Discuss the industrial application of antibiotics production by actinomycetes and bacterial.
4. Elaborate on commercial microbial synthesis of vitamins.