ST.JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

IV SEMESTER **BIOTECHNOLGY** TIME: 2 HRS/WEEK BTH 4754 (2) **ENVIRONMENTAL & INDUSTRIAL BIOTECHNOLOGY** MAX. MARKS: 50 w.e.f. 2020-21 (AH Batch) **PRACTICAL**

**OBJECTIVE:**To enable the student to apply the different principles of Biotechnology in the preparation of different industrial products.

**COURSE OUTCOMES: Students will**

* **CO1:** Get hands-on training to produce industrial beverages on a productive scale.
* **CO2:** Proficient in checking the quality of industrial beverages and water.
* **CO3:** Expertise in the area of soil fertility and known about plant-microbe

interactions.

**COURSE:**

1. Detection of coliforms for determination of the purity of potable water.
2. Determination of total dissolved solids of water
3. Determination of Hardness and alkalinity of water sample.
4. Determination of dissolved oxygen concentration of water sample
5. Determination of biological oxygen demand of sewage sample
6. Determination of chemical oxygen demand (COD) of sewage sample.
7. Isolation of industrially important microorganisms from soil.
8. Isolation of amylase producing organisms from soil.
9. Production of α – amylase from Bacillus Spp. by shake flask culture.
10. Production of alcohol or wine using different substrates.
11. Estimation of citric acid by titrimetry.

**REFERENCES:**

* + - 1. K. Vijaya Ramesh, Environmental Microbiology, 2004,MJP Publishers, Chennai.
      2. A.G. Murugesan, C. Raja Kumari, Environmental Science & Biotechnology - Theory &Techniques, 2005,MJP Publishers
      3. Environmental microbiology by Raina M.Maier Ian L.Pepper& Charles P.Gerba,2000,Academic press
      4. Environmental Chemistry, A.K. De. Wiley Eastern Ltd.,2001, New Delhi
      5. Introduction of Biodeterioration, D. Allsopp and K.J. Seal, ELBS/Edward Arnold,2008
      6. Power un seen: How microbes rule the world. By Dixon, B. Freeman/ Spectrum, 1994,Oxford.
      7. Environmental Microbiology. By. Mitchell. R. Wiley,1992, New York
      8. Introduction to Environmental Sciences, Y. Anjaneyulu ,2004, BS Publications
      9. Creueger W. &Crueger A.A Text of Industrial Microbiology,2000, 2nd Edition, Panima Publishers corp.

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