

B. N. Bandodkar College of Science, Thane
S. Y. B. Sc. (Sem IV) Examination 2014-15
USBO401

Duration 2^{1/2} Hrs

Total Marks 75

- N.B. 1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Draw neat labeled diagrams wherever necessary.
- Q.1 a) What is a stain? Explain principle of staining process with reference to chemical theory. 10
- OR
- a) Define culture medium. Give classification of culture medium based on components present in it. 10
- b) Describe various types of heterotrophic bacteria. 10
- OR
- b) Discuss role of *Rhizobium* as bacterial fertilizer. 10
- Q.2 a) With a neat labeled diagram describe the structure of a *Pinus* needle. 10
- OR
- a) Describe the male cone of *Pinus*. 10
- b) Describe the sporophyte of *Selaginella*. 10
- OR
- b) Give a detail account of *Calamites*. 10
- Q.3 a) Give the classification, distinguishing characters and economic importance of family Meliaceae 10
- OR
- a) With reference to taxonomy comment on Sacred groves. 10
- b) Discuss the morphological peculiarities and economic importance of family Rubiaceae. 10
- OR
- b) With reference to taxonomy comment on Herbarium. 10
- Q.4 Write short notes on **any three** of the following . 15
- a) Serial dilution method
- b) Preparation of Nutrient Agar
- c) Economic importance of *Pinus*
- d) Female gametophyte of *Selaginella*
- e) Botanical garden
- f) Economic importance of family Apocynaceae.