

**B. N. Bandodkar College of Science, Thane**  
**S. Y. B. Sc. (Sem IV) Examination 2014-15**  
**USBO402**

Duration 2<sup>1/2</sup> Hrs

Total Marks 75

- N.B. 1. All questions are compulsory.  
 2. Figures to the right indicate full marks.  
 3. Draw neat labelled diagrams wherever necessary.
- Q.1 a) Discuss the types of vascular bundle with the help of neat and labelled diagrams. 10  
OR  
 a) What are mechanical tissues? Explain any one studied by you. 10  
 b) Give a detail account of the types of stele. 10  
OR  
 b) Discuss in detail, defense mechanism in plants. 10
- Q.2 a) What is hydrosere? Discuss briefly various stages of it. 10  
OR  
 a) What is Protected Area Network (PAN)? Elaborate on different forms of it. 10  
 b) Explain vernalization process with suitable example and add a note on applications of it. 10  
OR  
 b) Give an account on 'Ecotourism' 10
- Q.3 a) Describe transcription of genetic message in prokaryotes. 10  
OR  
 a) Describe briefly the structure of different types of RNA molecules studied by you. 10  
 b) Discuss RNA processing with reference to Capping. 10  
OR  
 b) In an experiment on breeding fruits, experimenters obtained 315 red mesocarp with black seeds, 101 red mesocarp with brown seeds, 108 pink mesocarp with black seeds and 32 pink mesocarp with brown seeds. They predicted that the expected ratio of the fruits should be 9 red mesocarp with black seeds: 3 red mesocarp with brown seeds: 3 pink mesocarp with black seeds: 1 pink mesocarp with brown seeds. Calculate the chi-square value for the given data. Does the observed result fit with the hypothetical ratio?  
 According to the Chi square table critical value for p at 0.05 probability level and 3 degree of freedom is 7.82. 10
- Q.4 Write short notes on **any three** of the following .. 15  
 a) I-girders  
 b) Phloem as a conducting tissue  
 c) Classification of plants based on photoperiodism  
 d) Plants as indicators of environmental pollution  
 e) Nature of the Genetic code  
 f) Chi square test