

**VPM's B. N. Bandodkar College of Science, Thane**  
**S.Y.B.Sc Semester IV Examination March/April 2017**  
**USZO401 (Course VIII) (Revised Syllabus)**

**Duration: 2.5 Hrs**

**Total Marks: 75**

**N.B: 1. All questions are compulsory.**

**2. Figures to the right indicate marks.**

**3. Draw neat and labelled diagrams wherever necessary.**

- Q1 Write notes on: any four 20**
- a. Mutation theory.
  - b. Miller -Urey experiment.
  - c. Vestigial organs
  - d. Types of fossils
  - e. Weismann's theory
  - f. Organic evolution with reference to physiological aspects.
  - g. Neo Darwinism
  - h. Origin of eukaryotic cell.
- Q2 A) Answer any one from the following 10**
1. Give an account of the different patterns of macroevolution
  2. Describe different types of speciation
- B) Describe (any two): 10**
1. Progressive selection with suitable example.
  2. Genetic drift.
  3. Inbreeding
  4. Biological and evolutionary species concept.
- Q3 Explain (any two): 20**
- a. Report writing in detail and add a note on its types.
  - b. Portray the role of computer in research.
  - c. Types of research.
  - d. Steps in scientific methods.
- Q4 A) Write note on homologous organs. 05**
- OR**
- A) Match the following**
- | Column I           | Column II                     |
|--------------------|-------------------------------|
| 1. Vestigial organ | a) lipid bound                |
| 2. Coacervate      | b) mutation and genetic drift |
| 3. Herdmania larva | c) ancestral character        |
| 4. Ribozyme        | d) coccyx                     |
| 5. Neutral Theory  | e) primordial soup            |
- B) Write note on Inversion. 05**
- OR**
- B) Answer the following:**
- 1) What is aneuploidy?
  - 2) What is the equation of Hardy-Weinberg ?
  - 3) What is population genetics?
  - 4) What is coevolution?
  - 5) What is cline?
- C) Explain the essence of scientific method in research. 05**
- OR**
- C) Define:**
- i. Serendipity
  - ii. Conceptual research.
  - iii. Bias
  - iv. Inductive research.