

**Parvatibai Chowgule College of Arts and Science**  
**Autonomous**

B.Sc. Semester End Examination, January, 2022

Semester: I

Subject: Botany

Title: Cell Biology and Biomolecules (Core)

Duration: 2 Hours

Max. Marks: 45

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**Instructions to candidates:**

1. All questions are compulsory
  2. Draw diagrams wherever necessary
  3. Numbers to the right indicate full marks
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**Q1. Answer ANY THREE of the following** (9)

1. pH
2. Gap junctions
3. Microtubule
4. M-face-matrix

**Q2. Answer ANY TWO of the following.** (12)

1. What is a Buffer? Explain its biological significance?
2. Differentiate between Prokaryote and Eukaryote cell
3. What is Chromatin? Explain the folding of nucleosome into solenoid structure.

**Q3. Answer ANY TWO of the following.** (12)

1. Explain in detail the biogenesis of Mitochondria.
2. Describe the Active and Passive transportation in detail
3. Describe Nucleus and its Organization.

**Q4. A. Answer ANY ONE of the following.** (12)

1. With the help of a neat labeled diagram describe the involvement of various molecules in the formation of Plasma membrane which gives it a definite structure.

**OR**

2. Biomolecules are formed as a result of bondings. Write in detail on different types of bondings which gives the tertiary structure to the Proteins.

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