

Final Assessment Test – November/December 2023

Course: **BBIT204L - Cell Biology and Genetics**

Class NBR(s): **1985 / 1987**

Time: **Three Hours**

Slot: **B1+TB1**

Max. Marks: **100**

KEEPING MOBILE PHONE/SMART WATCH, EVEN IN 'OFF' POSITION IS TREATED AS EXAM MALPRACTICE

General Instructions: Draw the diagrams and formulae wherever necessary.

Answer any TEN Questions

(10 X 10 = 100 Marks)

1. Compare the bacteria, animal and plant cells with respect to similarities and differences among the cell organelles.
2. Appraise the structure and function of mitochondria and chloroplast.
3. Compare the vegetative and germline cell division and its significance.
4. Appraise different phases of cell cycle and checkpoints. Mention its significance.
5. Compare the passive transport versus active transport system with any two suitable examples.
6. Illustrate the entry of toxins in cell through cell membrane. Give suitable examples.
7. Discuss cell signal transduction involved with IP_3 and Ca^{++} ions as secondary messenger.
8. Discuss any two deviations from Mendelian laws of inheritance.
9. Discuss crossing - over and its significance in inducing genetic variations.
10. How environment influences sex determination in some organisms? Give suitable examples with justification.
11. Explain the mechanism of genetic imprinting. Give any two suitable examples.
12. Briefly outline the following: Euphenics and Prenatal genetic counselling.

