

**VIT**

Vellore Institute of Technology

Final Assessment Test – November/December 2023Course: **BBIT204L - Cell Biology and Genetics**Class NBR(s): **1986 / 1988**Time: **Three Hours**Slot: **B2+TB2**Max. Marks: **100**

KEEPING MOBILE PHONE/SMART WATCH, EVEN IN "OFF" POSITION, IS TREATED AS EXAM MALPRACTICE
General Instruction: DRAW NEAT DIAGRAMS WHENEVER NECESSARY.

Answer any TEN Questions**(10 X 10 = 100 Marks)**

1. Describe different classes of proteins present in cell membrane with special reference to their functions.
2. How different types of cyclins control cell cycle? Give a detailed account.
3. How many types of ATP-powered pumps are found in cell membrane? Give a detailed account on structure, location, and function of any one of them.
4. Comment on endocrine, paracrine, and autocrine signalling. How paracrine signalling differs from endocrine signalling?
5. From which experiment, Mendel postulated the principle of independent assortment? Explain the experiment with an example.
6. What is chromosomal aberration? Write a note on different types of chromosomal aberrations.
7. How X-linked and Y-linked inheritance play a prominent role in certain phenotypic outcomes? Discuss in detail.
8. What are the assumptions of Hardy-Weinberg equilibrium? Discuss in detail.
9. What is the role of genetic counsellor and how does prenatal testing contribute to positive eugenics?
10. What are the different types of endoplasmic reticulum present in eukaryotic cells? Give detailed account of their structure and functions.
11. Give detailed account of ion-channel-coupled and enzyme-coupled receptors present on the cell membrane.
12. What are the different types of filaments present in cytoskeleton? Compare their structure, composition, location, and functions.

