

**VIT**Vellore Institute of Technology
(Deemed to be University under section 3 of UGE Act, 1956)**School of Bio Sciences and Technology****Fall Semester 2022-2023 – CAT II****Course Name & code: Cell Biology and Genetics, BBIT204L****Programme Name & Branch: B. Tech, Biotechnology****Class Number: VL2022230101453, VL2022230101448 Slot: B2+TB2****Faculty Name: Abul Kalam Azad Mandal, Rajasekaran C****Exam Duration: 90 minutes****Maximum Marks: 50****General instruction(s):**

Draw neat diagrams wherever necessary

Q. No.	Question	Max Marks
✓ 1.	Why does transport of large and complex molecules through cell membrane requires integral proteins? What is the name for this type of transport? Discuss with example major types of transports available in the cell.	10
✓ 2.	How glycogen metabolism is regulated by cAMP in cell. Give the complete signal transduction pathway in this case.	10
3.	a) What are the conditions that make CDK active and inactive? (5 Marks) b) What are the roles of three major cyclins in cell cycle regulation? (5 Marks)	10
4.	Taking one suitable example, explain how toxins enters the cell.	10
✓ 5.	In some case of flower colour inheritance, dominant allele is not expressed fully in hertozygotic condition in F1 generation. If these heterozygotes are self-crossed, what will be the outcome in the F2 generation? Which of the Mendel's laws is not followed here?	10