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School of Biological and Life sciences**Master of Science in Biochemistry****Mid Term Examination - May 2024****Duration : 90 Minutes****Max Marks : 50****Sem II - P1PP204B - Genetics**General Instructions*Answer to the specific question asked**Draw neat, labelled diagrams wherever necessary**Approved data hand books are allowed subject to verification by the Invigilator*

- 1) If an individual carries one dominant allele and one recessive allele for a trait, what will be their phenotype? K2 (2)
- 2) State Mendel's Law of Independent Assortment K1 (3)
- 3) If you have a plant with purple flowers (dominant) of unknown genotype, how would you determine whether it is homozygous or heterozygous for flower color? K2 (4)
- 4) What is a linkage map, and how is it constructed? K2 (6)
- 5) Discuss epigenetic modifications. K3 (6)
- 6) Discuss the relationship between epigenetic alterations and various diseases, such as cancer and neurodevelopmental disorders. K3 (9)
- 7) Describe the differences between non-crossover and crossover chromatids. K4 (8)
- 8) Explain the clinical features and symptoms of Prader-Willi syndrome, including its cognitive and behavioral aspects. K4 (12)

OR

- Describe the clinical characteristics of Angelman syndrome, including its neurological and developmental features. K4 (12)