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School of Biological and Life sciences

Master of Science in Biochemistry
Semester End Examination - Nov 2023

Duration : 180 Minutes
Max Marks : 100

Sem III - MSDB6001 - GeneticsGeneral 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) Explain about deviations from Mendelian inheritance K1 (2)
- 2) Give an example of a sex-limited trait that is influenced by both genetic and environmental factors K2 (4)
- 3) Explain why double crossovers are less frequent than single crossovers during genetic recombination. K2 (6)
- 4) Discuss DNA repair mechanism. K3 (9)
- 5) Discuss the role of chromosomal aberrations in cancer and how they contribute to tumor development K3 (9)
- 6) Discuss the challenges and benefits of studying pleiotropy in complex traits and diseases K5 (10)
- 7) Can you describe an example of population structure in a specific species? K4 (12)
- 8) Define cytoplasmic inheritance? Write an essay on plastid inheritance or mitochondrial inheritance with suitable examples K5 (15)
- 9) Discuss the genetic mechanisms that lead to the differentiation of workers, queens, and drones in social insect colonies based on the Genetic Balance Theory K5 (15)
- 10) Discuss the role of point mutations in evolution K6 (18)