Roll No. | | | | | | | | | |

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COER University

END SEMESTER EXAMINATION, EVEN SEM 2022-23

Time : 3 hours
Program Name : B.Sc.(Hons.)Agriculture
Course Name : Fundamentals of Genetics

Total Marks : 100
Semester : II
Course Code : BSAG201

Note: All questions are compulsory. No student is allowed to leave the examination hall before the completion of the time.

Q. No 1	Attempt Any Five Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Explain how polyploidy can arise in plants and how it affects the genetic makeup.	CO 1	1,2
(b)	Differentiate between monohybrid and dihybrid cross.	CO 1	1,2
(c)	Give examples of aneuploidy conditions and explain how they arise.	CO 1	1,2
(d)	Compare between mitosis and meiosis.	CO 1	1,2
(e)	What is crossing over and how does it occur during meiosis?	CO 1	1,2
(f)	Summarize the pre mendelian and post mendelian concept of heredity.	CO 1	1,2

Q. No 2	Attempt Any Five Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Define cytoplasmic inheritance and describe how it differs from nuclear inheritance.	CO 2	2,6
(b)	Describe the various factors affecting crossing over.	CO 2	2,6
(c)	Describe Linkage and its types on the basis of genes and chromosomes involved.	CO 2	2,6
(d)	Describe probability test of mendelian genetics.	CO 2	2,6
(e)	Describe the three main stages of the cell cycle and briefly explain what happens during each stage.	CO 2	2,6
(f)	Illustrate chromosomes mapping with suitable examples	CO 2	2,6

Q. No 3	Attempt Any Five Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Discuss the Law of Independent assortment with suitable example.	CO 3	2
(b)	Discuss the phenomenon of translocation and explain its types.	CO 3	2
(c)	Give an account on genetic disorders due to X-linked inheritance	CO 3	2
(d)	What are mutagens? Explain types of mutagens in detail.	CO 3	2
(e)	Discuss the potential applications of the CIB technique in agricultural biotechnology	CO 3	2
(f)	Write a note on trisomy , tetrasomy, nullisomy and monosomy.	CO 3	2

Q. No 4	Attempt Any Five Parts. Each Question Carries 5 Marks.	CO	BL
(a)	Compare and contrast cytogenetic mapping and molecular mapping.	CO 4	4
(b)	Explain the Lac Operan model in detail with labeled diagram.	CO 4	4
(c)	What is a linkage group and how is it related to the chromosomal theory of inheritance?	CO 4	4
(d)	Discuss polygenes and the various functions of polygenes in detail.	CO 4	4
(e)	Discuss post-Mendelian concepts of heredity, such as polygenic inheritance and epigenetics.	CO 4	
(f)	Analyze genetic disorders and describe its various types in detail.	CO 4	4

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