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FIFTH SEMESTER (CUFYUGP) DEGREE EXAMINATION, NOVEMBER 2026

BOTANY

BOT5CJ303 GENETICS, PLANT BREEDING & PALAEOBOTANY

2024 Admission onwards

Maximum Time :2 Hours **Maximum Marks :70**

Section A

All Questions can be answered. Each Question carries 3 marks (Ceiling : 24 Marks)

1	Definition of genetics
2	What is epistasis?
3	What is complete dominanace?
4	Define linkage.
5	Write monosomy with examples.
6	What is chromosome mapping?
7	Find the organization of ICAR and its role in plant
8	Define intervarietal hybridization with examples
9	Name two prominent Indian palaeobotanists.
10	What is fossil formation?

Section B

All Questions can be answered. Each Question carries 6 marks (Ceiling : 36 Marks)

11	Explain the concept of lethal genes using Sickle Cell Anaemia in humans as an example.
12	Provide a brief summary of Gregor Johann Mendel's life and his research work.
13	Describe the cytological basis of crossing over to prove with evidences.
14	Describe the types of structural changes in chromosome.
15	Compare mass selection, pureline selection, and clonal selection and their criteria.
16	Outline the basic methodology and major achievements of mutation breeding and polyploidy breeding.
17	Describe the salient features, taxonomic position, and reconstruction of the fossil gymnosperm of *Williamsonia*.
18	Name the Indian Palaeobotanists and their contributions.

Section C

Answer any ONE .Each Question carries 10 marks (1x10=10 Marks)

19	Define mutation. Differentiate between spontaneous and induced mutations, and outline their causes and their genetic consequences.
20	Explain dominant epistasis using fruit color in summer squash with a cross and phenotypic ratio.