

GOVT.D.B. GIRL'S P.G. AUTONOMOUS COLLEGE

RAIPUR CHHATTISGARH

FACULTY OF BOTANY

SYLLABUS

OF

B.Sc. (BOTANY)

PART-I, II, III

2020-21

Signature of Chairman

Signature of Member (Subject)

DEPARTMENT OF BOTANY

CLASS-B.Sc. Part-I (Botany)

SESSION: 2020-21

PAPER –I

BACTERIA, VIRUSES, FUNGI, LICHENS AND ALGAE

MAXIMUM MARKS: 50

NUMBER OF UNIT:V

MINIMUM MARKS: 17

UNIT-I

VIRUSES: General characteristics, types of viruses based on structure and genetic material. Multiplication of viruses (General account), Lytic and Lysogenic cycle. Economic importance. Structure and multiplication of Bacteriophages. General account of Viroids, Virusoids, Prions, and Cyanophages. Mycorrhiza-Types and Significance.

UNIT –II

BACTERIA: General characteristics and classification (on the basis of morphology), fine structure of bacterial cell, Gram positive and Gram negative bacteria, mode of nutrition and reproduction vegetative, asexual and recombination (Conjugation, transformation and transduction), Economic importance. Microbial Biotechnology, *Rhizobium*, *Azotobacter*, *Anabena*.

UNIT-III

FUNGI: General account of habit and habitat, structure (range of thallus organization), cell wall composition, nutrition and reproduction in fungi. Heterothallism and Parasexuality. Outlines of classification of fungi. Economic importance of fungi. Life cycles of *Saprolegnia*, *Albugo*, *Aspergillus*, *Peziza*, *Agaricus*, *Ustilago*, *Puccinia*, *Alternaria* and *Cercospora*. VAM Fungi

UNIT-IV

ALGAE: Algae: General characters, range of thallus organization, Gaidukov phenomenon, reproduction, life cycle patterns and economic importance. Classification, Systematic position, occurrence, structure and life cycle of following genera : *Nostoc*, *Gloeocapsa*, *Volvox*, *Oedogonium*, *Vaucheria*, *Chara*, *Ectocarpus*, *Polysiphonia*.

UNIT –V

Lichens- General account, types, structure, nutrition, reproduction and economic importance. Mycoplasma: Structure and importance. Blue Green Algae (BGA) in nitrogen economy of soil and reclamation of Ushar land. Mushroom Biotechnology

APPROVED BY THE BOARD OF STUDIES ON

NAME	IN THE CAPACITY OF	SIGNATURE
Dr. J.N.Verma	CHAIRMAN	
Dr. J. K. Verma	SUBJECT EXPERT(V. C. Nominee)	
Dr. S. Moghae	SUBJECT EXPERT(Principal Nominee)	
Dr. P.K.Saluja	MEMBER OF THE DEPARTMENT	
Dr. Aruna Shrivastava	MEMBER OF THE DEPARTMENT	
Dr. Deepa Shrivastava	MEMBER OF THE DEPARTMENT	
Dr. V. Acharya	MEMBER OF THE DEPARTMENT	
Dr. B.M.Lall	MEMBER OF THE DEPARTMENT	
Dr. Neetu Harmukh	MEMBER OF THE DEPARTMENT	

DEPARTMENT OF BOTANY

CLASS-B.Sc. Part-I (Botany)

SESSION: 2020-21

PAPER –II

**(BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND
PALAEOBOTANY)**

MAXIMUM MARKS: 50

NUMBER OF UNIT: V

MINIMUM MARKS: 17

UNIT –I

BRYOPHYTA: General characteristics, affinities, range of thallus organization, general classification and economic & ecological importance, Systematic position, occurrence, morphology anatomy and reproductive structure in *Riccia*, *Marchantia*, *Pellia*, *Anthoceros*, *Funaria*. Vegetative reproduction in Bryophytes, Evolution of sporophytes.

UNIT-II

PTERIDOPHYTES: General characteristics, affinities, economic importance and classification, Heterospory and seed habit, stellar system in Pteridophytes, Aposory and apogamy, Telome theory, *Azolla* as Biofertilizer.

UNIT-III

Systematic position, occurrence. Morphology, anatomy and reproductive structure of *Psilotum*, *Lycopodium*, *selaginella*, *Equisetum*, *Marsilea*.

UNIT-IV

GYMNOSPERM: General characteristics, affinities, economic importance and classification, Morphology, anatomy and reproduction in *Cycas*, *Pinus* and *Ephedra*.

UNIT-V

PALAEOBOTANY: Geological time scale, types of fossils and fossilization, Rhynia, study of some fossil gymnosperms. *Lygenopteris*

APPROVED BY THE BOARD OF STUDIES ON

NAME	IN THE CAPACITY OF	SIGNATURE
Dr. J.N.Verma	CHAIRMAN	
Dr. J. K. Verma	SUBJECT EXPERT(V. C. Nominee)	
Dr. S. Moghae	SUBJECT EXPERT(Principal Nominee)	
Dr. P.K.Saluja	MEMBER OF THE DEPARTMENT	
Dr. Aruna Shrivastava	MEMBER OF THE DEPARTMENT	
Dr. Deepa Shrivastava	MEMBER OF THE DEPARTMENT	
Dr. V. Acharya	MEMBER OF THE DEPARTMENT	
Dr. B.M.Lall	MEMBER OF THE DEPARTMENT	
Dr. Neetu Harmukh	MEMBER OF THE DEPARTMENT	

B.Sc. Part-I 2020-21

SCHEME OF PRACTICAL EXAMINATION

M.M.50

S.NO.	TITLE	MARKS
1.	Algae/Fungi/Gram Staining	10
2.	Bryophyta / Pteridophyta	10
3.	Gymnosperm	10
4.	Spotting	10
5.	Viva-Voce	05
6.	Sessional	05
Total Marks		50

APPROVED BY THE BOARD OF STUDIES ON

NAME	IN THE CAPACITY OF	SIGNATURE
Dr. J.N.Verma	CHAIRMAN	
Dr. J. K. Verma	SUBJECT EXPERT(V. C. Nominee)	
Dr. S. Moghae	SUBJECT EXPERT(Principal Nominee)	
Dr. P.K.Saluja	MEMBER OF THE DEPARTMENT	
Dr. Aruna Shrivastava	MEMBER OF THE DEPARTMENT	
Dr. Deepa Shrivastava	MEMBER OF THE DEPARTMENT	
Dr. V. Acharya	MEMBER OF THE DEPARTMENT	
Dr. B.M.Lall	MEMBER OF THE DEPARTMENT	
Dr. Neetu Harmukh	MEMBER OF THE DEPARTMENT	