



**AL-HAFEZ
COLLEGE,
ARA**

BOTANY

**ONLINE
CLASS**

**Lect. Deliver by
Dr.MD.SAIF**

**HOD.
DEPT.OF
BOTANY**

Introduction class for B.sc Part 1 (Hon's) 2020-21



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Time : 3 Hours

Full Marks :75

Ten questions have to set. Out of which Question No. 1 will be of objective type and compulsory covering the entire syllabus. Out of remaining 9 questions which has to be set from all the two groups, four questions has to be answered besides Question No:-01 selecting one from Group-A; two from Group-B and one from Group-C

PAPER- I

PLANT KINGDOM

Classifiaction

Classification of plant kingdom, Biodiversities of plant, Origin evolution and phylogeny of land plant.

Algae

General characters , classification , evolutionary trends ultra, structure of Algal cell and economic importance of Algae, Salient features and life history of Cyanophyceae.

Chlorophyceae-Volvox, ,Oedogonium, Coleochaete

Xanthophyceae- Vaucheria,

Phaeophyceae- Ectocarpus,Fucus

Rhodophyceae- Polysiphonia

Fungi, Lichens and Plant disease

General character, Modern Classification

Types of fungal spores and mode of their dispersal and their

Economic importance, Salient features and life history of Mastigomycotina-

Pythium,Phyto phytophthora, Zygomycotina- Mucor, Ascomycotina-

Eurotium , Peziza, Basidiomycotina- Puccinia,Ustilago, Agaricus,

Deuteromycotina- Alternaria, Cercospora, General idea of Lichens,

Classification and their types.

BRYOPHYTES

Classification and comparative account of morphology, anatomy, and

reproduction in Hepaticopsida- Riccia and Marchantia Anthocerotopsida-

Anthoceros, Bryopsida- Funaria; Evolution of sporophytes and

Gametophytes; ecological aspect and economic importance

PTERIDOPHYTES

Salient features of primitive vascular plants Classification; comparative

account of morphology , Anatomy and reproduction in psilopsida –Rhynia

and Psilotum, Lycopsida- Lycopodium, Selaginella, Sphenopsida- Equisetum

and Pteropsida –Marsilea

GYMNOSPERM

Salient features and classification

Evolution significance

Comparative account of morphology, anatomy and reproduction in

Cycadopsida- Cycas

Coniferopsida – Pinus

Genetopsida - Gnetum and their economic relevance

Plant fossils - Definition and its scope , condition of fossilization and of preservation. A brief account of Lyginodendron and Williamsonia.

A brief reference of plant fossils found in Bihar.

ANGIOSPERM

Unique-features and diversity, Primitive and advance features.

Paper-II

CELLBIOLOGYAND GENETICS

CELL BIOLOGY

1. Cell:

Historical background shape, size and structure of the cell; comparative account of Prokaryotic and Eukaryotic cell;

2. Nucleus:

Ultra structure of nuclear envelop, unclear pore compels, matrix and nucleoplasm, DNA and his tones

3. Ribosome:

Structure of ribosome and its functional significance in protein synthesis.

4. Mitochondria and chloroplast:

Origin structure, biogenesis and function of mitochondria and chloroplast.

5. Structure and function of other organelles:

Golgi complex, Endoplasmic reticulum, Lysosome. Peroxisome, Glyoxysome, Micro bodies and cytoskeleton.

6. Cell wall and Cell membrane:

Origin, ultra structure, chemical constituents and their functions;

7. Techniques in Cell Biology:

Principles of Light and electron microscope; chromatography TLC GLC and HPLC. Gel electrophoresis and Autoradiography and its applications,

GENETICS

- 1. Mendel's experiments and the laws of inheritance.**
- 2. Gene interaction and modified dihybrid ratio-Complementary. Supplementary, Duplicate, Epitasis and inhibitory factors.**
- 3. Multiple alienisms.**
- 4. Linkage and crossing over.**
- 5. Balance theory of sex determination and sex linked inheritance.**
- 6. Extra-nuclear inheritance**

7. Population Genetics and Evolution; Evolution by natural selection, genes in populations: 1-lardy Weinberg equilibrium. Genetic diversity, Neo-Darwinian evolution.

8. Brief 'of Human genetics such as Genetic diseases, Genes and cancer, Gene therapy,

9. Mutation and its role in crop improvement, change in chromosome structure (Chromosomal aberrations) and change in chromosome numbers (Polyploidy).

10. Methods of crop improvement: Introduction; pure line and mass selection; hybridization in self and cross pollinated crops; acclimatization; mutation and polyploidy breeding:

11. Germplasm conservation and its role in crop improvement.

Ok Now we shall study all syllabus one by one in net classes.