**SH-112**

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# M.Sc. (Part - II) (Semester - III) (CBCS) (NewRevised) Examination, January-2023

## BOTANY [Mycology & Plant Pathology]

## CCS-302: Taxonomy of Fungi (Paper - XI)

## Sub. Code: 85320/80538

**Day and Date : monday, 09 - 01 - 2023** **Total Marks : 80**

**Time : 10.30 a.m. to 1.30 p.m.**

**Instructions :**
1) **All questions carry equal marks.**
2) **Question number 7 is compulsory.**
3) **Attempt any four questions from the remaining.**
4) **Draw neat diagrams wherever necessary.**

**Q1)** Write in brief on general features of Fungi. **[16]**

**Q2)** Describe the ultrastructure of Zoospores of chytridiomycota. **[16]**

**Q3)** Describe various tests used in Serology in identification of fungal taxa. **[16]**

**Q4)** Define stain. Give composition and preparation of any two stains. **[16]**

**Q5)** Explain the following:

a) Special culture media. **[8]**

b) Fruiting bodies in Aphyllophorales. **[8]**

***P.T.O.***

**Q6)** Write on :

a) Biochemical criterion in Identification of Fungal taxa. **[8]**

b) Freezing Microtome. **[8]**

**Q7)** Write short notes on any four of the following : **[4×4 = 16]**

a) Types of Septa.

b) Types of Haustoria.

c) Biotrophs.

d) Hand microtome.

e) Artificial Media.

f) Clearing.

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# M.Sc. (Part - II) (Semester - III) (CBCS) (New Revised) Examination, January - 2023

## BOTANY

## Biotechnology and Genetic Engineering (Paper - DSE-304)

## Sub. Code: 80551/85318

**Day and Date : Saturday, 07 - 01 - 2023** **Total Marks : 80**

**Time : 10.30 a.m. to 1.30 p.m.**

**Instructions :**
1) **All questions carry equal marks.**
2) **Question number 7 is compulsory.**
3) **Attempt any four questions from the remaining.**
4) **Draw neat diagrams wherever necessary.**

**Q1)** Define RNA interference. Describe its process and application. **[16]**

**Q2)** Describe isolation, separation and analysis of lipid molecules. **[16]**

**Q3)** Elaborate construction of chimeric DNA. **[16]**

**Q4)** What is protein engineering? Add note on methods of protein engineering. **[16]**

**Q5)** a) Explain: cDNA libraries. **[8]**

b) Explain: Analysis of gene expression at protein level. **[8]**

**Q6)** a) Describe : the concept of recombinant DNA technology. **[8]**

b) Describe : Southern blotting and its application. **[8]**

**Q7)** Write short notes on <u>any four</u> of the following: **[16]**

a) Exons and introns
b) Large scale sequencing strategies
c) Molecular probes
d) Homologous genes
e) RAPD
f) Patent

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# M.Sc. (Part - II) (Semester - III) (CBCS) (New Revised) Examination, January - 2023

## BOTANY

## CCS - 301 : Cytogenetics and Crop Improvement (Paper - IX)

## Sub. Code : 80536/85317

**Day and Date : Thursday, 05- 01 - 2023** **Total Marks : 80**

**Time : 10.30 a.m. to 1.30 p.m.**

**Instructions :**
1) **All questions carry equal marks.**
2) **Question number 7 is compulsory.**
3) **Attempt any four questions from the remaining.**
4) **Draw neat diagrams wherever necessary.**

**Q1)** Describe in detail the molecular organization of centromere and telomere.

**Q2)** Explain in brief the centres of origin of cultivated plants.

**Q3)** What are the factors that can change the genetic variation of a population?

**Q4)** Define various classical and modern methods in crop breeding and improvement.

**Q5)** Write on :

a) Chromatin organization.

b) Mobile genetic elements and their significance.

***P.T.O.***

**Q6)** Explain the following :

a) Gene flow and population structure.

b) Use of cytoplasmic male sterility in hybrid breeding.

**Q7)** Write short notes on any four of the following:

a) Euchromatin

b) Gene banks

c) Gene families

d) Genetic drift

e) Methods of breeding in cross-pollinated crops

f) Marker assisted breeding

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