Enrollment No……..

Master of Science (Botany)

Fourth Semester Main Examination, Aug-Sep 2020

Plant Cell Tissues and Organ Culture [MSB401T]

Time: 3:00 Hrs **Max Marks 85**

Note: Attempt all questions.
Each question has two parts.
Part A is 10 marks and part B is 7 marks.

Q.1 (a) Write about the history & scope of cellular differentiation.
(b) Write notes on:- (i) Plant cell (ii) Tissue culture
OR
(a) Explain all techniques of tissue culture.
(b) Write notes on:- (i) Organ culture (ii) In vitro fertilization

Q.2 (a) Write the mechanisms, techniques and utility of organogenesis.
(b) What are the fundamental aspects of morphogenesis?
OR
(a) Write a note on-(i) Fusion & culture (ii) Somatic hybridization
(b) Write achievements and limitation of protoplast research.

Q.3 (a) Write notes on :-(i) Clonal protoplast (ii) Artificial seeds
(b) Explain soma clones & soma clonal variation.
OR
(a) Write notes on:- (i) Application of plant tissue
(ii) Cryopreservation
(b) What is germplasm storage?

Q.4 (a) Write notes on :-(i) Totipotency (ii) Concept of cellular differentiation
(b) What is somatic hybridization?
OR
(a) Write note on production of secondary metabolites.
(b) Write possibilities of protoplast research.

Q.5 (a) Explain somatic embryogenesis and androgenesis.
(b) Explain in vitro fertilization.
OR
(a) Write notes on:- (i) Soma clones & Soma clonal
(ii) Limitation of protoplast research
(b) Define mechanism techniques and utility of androgenesis.

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Master of Science (Botany)

Fourth Semester Main Examination, Aug-Sep 2020

Biotechnology & Genetic Engineering [MSB402T]

Time: 3:00 Hrs **Max Marks 85**

Note: Attempt all questions. Each question has two parts.
Part A is 10 marks and part B is 7 marks.

Q.1 (a) Explain basic concepts of biotechnology and genetic engineering.
(b) Define principles & scope of biotechnology and genetic engineering.

OR

(a) What is recombinant DNA technology?
(b) What is polymerase chain reaction?

Q.2 (a) Write notes on:
i) T- DNA ii) Chloroplast transformation
(b) Explain genetic engineering of plants

OR

(a) What is bacterial transformation?
(b) What is fermentation technology?

Q.3 (a) Write notes on :
i) Artificial chromosomes ii) Functional genomics
(b) Explain significance of protein profiling.

OR

(a) Write a note on choice of vectors.
(b) Explain DNA fingerprinting.

Q.4 (a) What is microbial genetic manipulation?
(b) Define bacterial transformation.

OR

(a) Write note on uses fermentation technology.
(b) What is utility of chloroplast transformation?

Q.5 (a) What are genomics & proteomics?
(b) Write about protein profiling and its significance.

OR

(a) Write notes on :
i) Bioinformatics ii) Artificial chromosomes
(b) Write principles & techniques of gene cloning.

Enrollment No……

Master of Science (Botany)
Fourth Semester Main Examination, Aug-Sep 2020
Plant Pathology [MSB403T]

Time: 3:00 Hrs **Max Marks 85**

Note: Attempt all questions.
Part A is 10 Marks and Part B is 07 Marks.

Q.1 (a) Do you agree that enzymes play role in pathogenesis?
(b) Explain the methods of studying plant diseases.

OR

(a) Write note on- (i) History of plant pathology
(ii) Progress of plant pathology
(b) Explain the disease of wheat.

Q.2 (a) Define quarantine with respect to plant disease.
(b) Write notes on- (i) Hormonal in balance
(ii) Treatment & couses

OR

(a) Write the development of pathogen role of enzyme.
(b) How do plant pathogens spread?

Q.3 (a) Describe the symptom, disease cycle & control of Tikka disease of groundnut.
(b) Write short note on dispersal of plant pathology.

OR

(a) Give an account of organic fungicides.
(b) Describe the symptom, disease cycle& control of blast of rice.

Q.4 (a) Define the following-
(i) Soil borne & seed borne disease
(ii) Infections & non- infection disease.
(b) Write factors effecting disease resistance in plant.

OR

(a) Explain the importance of biological control in plants?
(b) Describe chemical methods for plant disease control.

Q.5 (a) Describe the methods of control of disease in -Mango, rice
(b) Discus the disease in cotton & its methods of control.

OR

(a) Write notes on:- (i) Antibiotics
(ii) Antagonism
(iii) Bordeaux mixture.
(b) Write about the sugar cane disease.

Enrollment No……

Master of Science (Botany)
Fourth Semester Main Examination, Aug-Sep 2020
Pollution Ecology [MSB404T]

Time: 3:00 Hrs **Max Marks 85**

Note: Attempt all questions. Each question has two parts.
Part A is 10 Marks and Part B is 7 Marks.

Q.1 (a) Describe biological indicators of pollution.
(b) Describe the Bhopal gas tragedy source of water pollution.

OR

(a) What do you mean by environment pollution?
(b) How the odour is removed by using bio scrubbers?

Q.2 (a) Explain the transport & dispersion of pollutants.
(b) Write note on soil atmosphere.

OR

(a) Discuss the causes of air pollution.
(b) Explain water pollution.

Q.3 (a) Discuss air pollution.
(b) What are the effects of air pollution on flora & fauna?

OR

(a) How can we help stop water pollution?
(b) Explain water harvesting.

Q.4 (a) Explain the treatment of solid waste management.
(b) Show the specialty of alluvial soil present in India.

OR

(a) What is pesticides & What is the effect of pesticides on soil?
(b) Write a short note on the main soil found in India.

Q.5 (a) Write an article on the environment protection Act in M.P.
(b) Explain monitoring & controlling system of air pollution.

OR

(a) Write about the analytical method for air, water & soil pollution.
(b) Explain monitoring & controlling system of water pollution.