MAY 2011

[KY 349] **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION

(Regulations 2010)

Candidates admitted from 2010-2011 onwards

FIRST YEAR

BRANCH III – PHARMACOGNOSY

PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : Three hours **Maximum : 100 marks**

Answer All questions

I. Essay Questions : **(6 x 10 = 60)**

1. Explain in detail about cell suspension culture and its applications.
2. Discuss in detail about different methods of isolation of phytoconstituents.
3. Enumerate the usefulness of secondary metabolites in chemosystematics.
4. Write a note on production of dextrose from starch and cellulose substrate.
5. Give a brief account on genetics and comparative phytochemistry in pharmacognosy.
6. Write a note on production of vitamin B_{12} by fermentation.

II. Write Short Notes : **(8 x 5 = 40)**

1. Microchemical analysis.
2. Callus culture.
3. Fermenter and its parts.
4. High Performance Thin Layer Chromatography.
5. Usefulness of secondary metabolites.
6. Application of NMR in the study of secondary metabolites.
7. Hairy root culture and its application.
8. Production of yeast.

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October 2011

[KZ 349] **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH III – PHARMACOGNOSY

PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : 3 hours (180 Min) **Maximum : 100 marks**

Answer ALL questions in the same order.

I. Elaborate on :	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. Describe elaborately about the fermentation technology with suitable examples and its applications in pharmaceutical industry.	17	40	20
2. How will you setup a plant tissue culture laboratory and discuss its basic requirements? Explain genetic manipulation of plant protoplasts.	17	40	20
II. Write notes on :			
1. Abberant synthesis in higher plants.	4	10	6
2. Functions of primary and secondary metabolites.	4	10	6
3. Role of light microscope in photochemistry.	4	10	6
4. Production of Ergot alkaloids by fermentation technology.	4	10	6
5. Production of single cell proteins.	4	10	6
6. Applications of HPTLC .	4	10	6
7. Effluent treatment in fermentation industry.	4	10	6
8. Hairy root culture and its applications.	4	10	6
9. Continuous hot percolation method of extraction.	4	10	6
10. Genetics and comparative phytochemistry in pharmacognosy.	4	10	6

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[LA 349] **MAY 2012** **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH III – PHARMACOGNOSY

PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code: 262910

Time: 3 hours **Maximum: 100 marks**

(180 Min)

Answer ALL questions in the same order.

I. Elaborate on:	**Pages (Max.)**	**Time (Max.)**	**Marks (Max.)**
1. (i) Explain in detail about production of phytopharmaceuticals through tissue culture. (ii) Write a note on microbiological conversion and aberrant synthesis in higher plants.	17	40	20
2. (i) Write in detail about the production of Ergot alkaloids. (ii) Give a brief account on fermentation technology and its applications.	17	40	20

II. Write notes on:

1. Spectral study of identification of secondary metabolites.	4	10	6
2. Production of dextrose from starch.	4	10	6
3. Pharmaceutical effluents.	4	10	6
4. Optical crystallography.	4	10	6
5. Callus culture.	4	10	6
6. Nutrients in tissue culture.	4	10	6
7. Usefulness of secondary metabolites.	4	10	6
8. Production of Vitamin B_{12} by fermentation.	4	10	6
9. Comparative phytochemistry in Pharmacognosy.	4	10	6
10. Production of Yeast and its uses.	4	10	6

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[LC 349] **APRIL 2013** **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH III – PHARMACOGNOSY

PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : 3 hours **Maximum : 100 marks**

I. Elaborate on : **(2x20=40)**

1. (i) Explain in detail about production of phytopharmaceuticals through tissue culture

   (ii) Write a note on microbiological conversion and aberrant synthesis in higher plants

2. Write a note on spectral and chemical methods of identification of crude drugs

II. Write notes on : **(10x6=60)**

1. High Performance Thin Layer Chromatography
2. Single cell protein
3. Protoplast culture
4. Secondary metabolites in chemosystematics
5. Hairy root culture and its application
4. Supercritical fluid extraction
6. Microchemical analysis
7. Production of Vitamin B_{12} by fermentation
8. Role of genetics in Pharmacognosy
9. Discuss the legal requirements for fermentation
10. Microbiological conversions

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[LD 349] **OCTOBER 2013** **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATIONS

FIRST YEAR

BRANCH III – PHARMACOGNOSY

PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time: Three Hours **Maximum: 100 marks**

Answer ALL questions in the same order.

I. Elaborate on : **(2 x 20 = 40)**

1. Describe in detail about the fermentation technology with suitable examples. Discuss its applications in pharmaceutical industry.

2. Discuss the laboratory requirements and media used for the plant tissue culture. Explain the secondary product formation by cell suspension culture.

II. Write notes on : **(10 x 6 = 60)**

1. Biotransormation.
2. Optical crystallography.
3. Abberant synthesis in higher plants.
4. Traditional methods of extraction.
5. Applications of IR spectroscopy.
6. Secondary metabolites in chemosystematics.
7. Usefulness of genetics on medicinal plants.
8. Vitamin $B_{12.}$
9. Yeast and its uses.
10. General methods of isolation of phytoconstituents.

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[LE 349] **APRIL 2014** **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH III – PHARMACOGNOSY
PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : 3 hours **Maximum : 100 marks**

I. Elaborate on : **(2x20=40)**

1. General methods of extraction, isolation and identification of phytoconstituents.
2. Genetics and comparative phytochemistry in Pharmacognosy.

II. Write notes on : **(10x6=60)**

1. Production of Penicillin through fermentation
2. Hairy root culture
3. Various microtechniques used in the identification of phytoconstituents
4. Aberrant synthesis in higher plants
5. Functions and usefulness of secondary metabolites
6. Chemical study of identification of phytoconstituents
7. Biotransformation
8. Secondary metabolites in chemosystematics
9. Cellular Totipotency
10. IR Spectroscopy in the identification of phytoconstituents

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[LF 349] **OCTOBER 2014** **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH III – PHARMACOGNOSY
PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : Three hours **Maximum : 100 marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Microbiological conversion and aberrant synthesis in higher plants.
2. Production of Penicillin and Dextrose through fermentation.

II. Write notes on: **(10 x 6 = 60)**

1. Primary and secondary metabolism.
2. Micro chemical analysis.
3. General techniques and laboratory requirements for plant tissue culture.
4. Production of yeast.
5. Single cell protein.
6. High performance thin layer chromatography.
7. Supercritical fluid extraction.
8. Spectral study of identification of phytoconstituents.
9. The legal requirements to carry out fermentation.
10. Plant tissue culture as a medium for the study of secondary plant metabolism.

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[LG 349] **APRIL 2015** **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION

FIRST YEAR

BRANCH III – PHARMACOGNOSY

PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time: Three Hours **Maximum: 100 marks**

Answer ALL questions

I. Elaborate on : **(2 x 20 = 40)**

1. Applications of plant tissue culture in the production of secondary metabolites.

2. Modern methods of separation and identification of phytoconstituents.

II. Write notes on : **(10 x 6 = 60)**

1. Microbiological conversions.

2. Comparative Phytochemistry in Pharmacognosy.

3. Production of penicillin through fermentation.

4. Microchemical analysis.

5. Production of Yeast and its uses.

6. Pharmaceutical effluents.

7. Biotransformation.

8. Cell suspension culture and its applications.

9. Functions of Secondary metabolites.

10. Spectral studies of identification of secondary metabolites.

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[LI 349] APRIL 2016 **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH III – PHARMACOGNOSY
PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : Three hours **Maximum : 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Pharmaceutical effluents, its treatment and legal requirements in Fermentation Technology.

2. Microbiological conversions and aberrant synthesis in higher plants.

II. Write notes on: **(10 x 6 = 60)**

1. HPTLC and its applications.
2. Supercritical fluid extraction and its applications.
3. Laboratory requirements and general techniques in plant tissue culture.
4. Usefulness of secondary metabolites.
5. Polarising microscope and its applications.
6. Nutritional requirements for plant tissue culture.
7. Application of IR spectroscopy in the identification of Phytoconstituents.
8. Production of single cell proteins.
9. Production of Vitamin B_{12} through fermentation.
10. Callus culture and its applications.

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[LK 349] MAY 2017 **Sub. Code: 910**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH III – PHARMACOGNOSY
PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : Three hours **Maximum : 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Principle, protocol and applications of cell suspension culture with neat diagrammatic representation.

2. a) Production of Penicillin by fermentation.

   b) Single cell proteins.

II. Write notes on: **(10 x 6 = 60)**

1. Microbiological conversion, aberrant synthesis in higher plants.
2. Microchemical analysis.
3. Callus culture.
4. Spectral study of the constituents of secondary Phytometabolites.
5. Pharmaceutical effluents – treatment and legal requirements.
6. Secondary metabolites in Chemosystematics.
7. Mutation.
8. Hot continuous extraction method.
9. Extraction of volatile oils.
10. Applications of fermentation technology.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LP 349] OCTOBER 2019 **Sub. Code: 2910**

M.PHARM. DEGREE EXAMINATION
FIRST YEAR
BRANCH III – PHARMACOGNOSY
PAPER IV – PHYTOCHEMISTRY AND BIOTECHNOLOGY

Q.P. Code : 262910

Time : Three hours **Maximum : 100 Marks**

I. Elaborate on: **(2 x 20 = 40)**

1. Modern methods of extraction of Phytoconstituents.
2. Production of Vitamin B_{12} through fermentation.

II. Write notes on: **(10 x 6 = 60)**

1. Biotransformation.
2. Growth pattern in cell suspension culture.
3. Hairy root culture.
4. Optical crystallography.
5. High Performance Thin Layer Chromatography.
6. Nutritional requirements in plant tissue culture.
7. Totipotency.
8. Chemical study of the identification of phytoconstituents.
9. Hybridisation.
10. IR spectroscopy in the identification of phytoconstituents.

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