

APRIL - 2001

[KD 733]

Sub. Code : 4224

FOURTH B.Pharmacy. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A & Sec. B.

Section C : 30 marks

Answer Sections A and B in the same Answer Book.

Answer Section C in the answer sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) How are Crude Drugs classified? Describe the merits and demerits of the different systems of classification. Which of these systems would you prefer and why? (10)

(b) Write a note on enzymes and drug stability. (5)

2. (a) Define Aristas and give the principle involved in its preparation and standardisation. (10)

(b) Briefly describe the production and utilisation of menthol. (5)

3. Write a detail note on plant growth regulators and highlight their role in the production of secondary metabolites. (15)

SECTION B — (6 × 5 = 30 marks)

4. Write short notes on any SIX :

(a) Source, characters, constituents and uses of Agar.

(b) Biogenetic studies.

(c) Mevalonic acid pathway.

(d) Tissue culture and its importance.

(e) Highlight the basic characters of umbelliferous fruits with examples.

(f) Production and utilisation of citric acid.

(g) Chemotaxonomy.

(h) Export potential of medicinal plants from India.

[KE 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours                      Maximum : 90 marks

Two and a half hours                  Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B                  Section C : 30 marks

Answer Section A and B in the same Answer Book.

Answer Section C in the Answer Sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO full questions.

1. (a) What are essential oils? How are they obtained? Give the merits and demerits of each method with examples. (10)
- (b) Write a suitable note on the bioactive compounds from marine sources. (5)
2. Describe the commercial method of preparation of
  - (a) Sennosides
  - (b) Vincristine and Vinblastine
  - (c) Quinine. (5 + 6 + 4 = 15)

3. (a) Describe the various chromatographic techniques employed in the analysis of plant constituents. (10)

      (b) Write a precise note on Plant Growth Regulators. (5)

SECTION B — (6 × 5 = 30 marks)

4. Write short notes on any SIX :
  - (a) Biosynthetic pathway of Digoxin
  - (b) Biosynthetic pathway of Atropine
  - (c) Utilization of Radioactive isotopes in the biogenetic studies
  - (d) Tetracyclines
  - (e) Surgical catgut
  - (f) Application of Tissue culture in the production of biomedicinals
  - (g) Papain
  - (h) Serotaxonomy.

**MARCH - 2002**

**[KG 733]**

**Sub. Code : 4224**

**FOURTH B.Pharm. DEGREE EXAMINATION.**

**Revised Regulations**

**Paper IV — ADVANCED PHARMACOGNOSY**

**Time : Three hours                      Maximum : 90 marks**

**Two and a half hours                  Sec. A & Sec. B : 60 marks**

**for Sec. A & Sec. B.                      Section C : 30 marks**

**Answer Sections A and B in the same answer book.**

**Answer Section C in the answer sheet provided.**

**SECTION A — (2 × 15 = 30 marks)**

**Answer any TWO questions.**

1. (a) What is absorbent cotton I.P.? (1)
- (b) Describe the preparation of absorbent cotton in details, for the market. (7)
- (c) How will you evaluate it? (7)
2. (a) Explain the terms Sutures and Ligatures. (2)
- (b) What is surgical catgut? (1)

MARCH - 2002

- (c) Describe the preparation of catgut. (6)
- (d) Explain the sterilization methods. (6)
3. What are the plant growth regulators? Explain their role in the production of secondary metabolites. (15)
4. (a) What are the different methods of extraction of phyto constituents? (3)
- (b) Describe the method of extraction, purification and separation of glycosides, from a drug you have studied. (8)
- (c) Explain the chemical test for the identification of glycosides. (4)
- (d) Applications of plant tissue culture
- (e) Plant growth regulators
- (f) Standardization of Ayurvedic formulations
- (g) Micro chemical analysis
- (h) Industrial production of senna glycosides.
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SECTION B — (6 × 5 = 30 marks)

5. Write notes on SIX of the following :
- (a) Applications of fermentation technology in pharmacy
- (b) Detection of adulterant
- (c) Electrophoresis in the identification of phyto constituents

SEPTEMBER - 2002

[KH 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours Maximum : 90 marks

Two and a half hours Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B Section C : 30 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the Answer Sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Give a detail note on study of plant growth regulators and their role in the production of secondary metabolites. (15)
2. Highlight and elaborate on the role of export potential of medicinal plants and their derivatives from India. (15)
3. (a) Highlight the special techniques involved in detection of common adulterants in whole and powdered drugs. (5)  
(b) What is micro chemical analysis? Discuss the role of Quantitative Microscopy in Quality of crude drugs. (10)
4. Write a detail note on Surgical dressings. Emphasizing on drugs procured from vegetable sources. (15)

SECTION B — (6 × 5 = 30 marks)

5. Write notes on any SIX of the following :
  - (a) Role of radioactive isotopes in biogenetic studies.
  - (b) Biosynthesis of steroidal glycosides.
  - (c) Preparation and standardization of Asawas, Churna.
  - (d) Importance of UV and Fluorescence analysis of drugs.
  - (e) Pharmaceutical importance of Papain and Pepsin.
  - (f) Preparation and standardization of surgical catguts.
  - (g) Role of Gelatin sponge in surgical dressings.
  - (h) Cod liver oil.

APRIL - 2003

[KI 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Two and a half hours

Sec. A & Sec. B : 60 marks

for Sec. A and Sec. B

Section C : 30 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the Answer Sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) What are essential oils? Mention the oils used in pharmacy. (3)  
(b) Write the Pharmacognosy of coriander. (7)  
(c) Outline the differences between volatile oils and fixed oils. (5)
2. (a) Describe the applications of chromatography and electrophoresis in the isolation, purification and identification of phyto constituents. (10)  
(b) Write the biosynthesis of tropane alkaloids. (5)

3. (a) Write down the various methods of quality control of crude drugs. (9)

(b) What are the principles involved in the preparation and standardisation of Ayurvedic formulations? (6)

4. Discuss on the plant growth regulators and their role in the production of secondary metabolites. (15)

SECTION B — (6 × 5 = 30 marks)

5. Write notes on SIX of the following :

- (a) Shikimic acid pathway.
- (b) Radioactive isotopes used in biogenetic studies.
- (c) Plant tissue culture and its applications.
- (d) Surgical Dressings.
- (e) Industrial production of quinine.
- (f) Marine Natural products and their uses in pharmacy.
- (g) Fermentation technology and its applications in Pharmacy.
- (h) Pharmaceutical enzymes.

OCTOBER - 2003

[KJ 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Two hours and forty minutes Sec. A & Sec. B : 70 marks  
for Sec. A and Sec. B

Twenty minutes for Sec. C

Section C : 20 marks

Answer Sections A and B in the SAME Answer Book.

Answer Section C in the Answer Sheet provided.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. Discuss the Biosynthetic pathway of
  - (a) Hyoscyamine
  - (b) Digitoxin. (2 × 7.5 = 15)
2. Write an essay on the development and establishment of callus cultures for the production of phytopharmaceuticals. Write a note on the application of tissue culture. (10 + 5 = 15)
3. Discuss various chromatography techniques for analysing phytoconstituents of crude drugs. (15)

SECTION B — (8 × 5 = 40 marks)

Write short notes on any EIGHT only.

4. Production and utilization of Menthol.
5. Shikimic acid pathway.
6. Therapeutic and pharmaceutical uses of marine products.
7. Export potential of medicinal plant extractives from India.
8. Preparation and standardization of Aristas.
9. Preparation and uses of Papain.
10. Importance of plant growth regulators.
11. Use of Fermentation technology in the production of Antibiotics.
12. Microchemical analysis.
13. Surgical catgut.

APRIL - 2004

[KK 733]

Sub. Code : 4224

**FOURTH B.Pharm. DEGREE EXAMINATION.**

(Revised Regulations)

**Paper IV — ADVANCED PHARMACOGNOSY**

Time : Three hours

Maximum : 90 marks

Sec. A & B : Two hours and

Sec. A & B : 70 marks

forty minutes

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer Sections A and B in the **SAME** Answer Book.

**SECTION A — (2 × 15 = 30 marks)**

Answer any **TWO** questions.

1. Define Choorna and write the process of preparation of Choornas and its standardization.
2. Enumerate the plant growth regulators and describe their role in the production of secondary metabolites.
3. Describe different chromatography techniques involved in the isolation of plant constituents.

**SECTION B — (8 × 5 = 40 marks)**

Write short notes on any **EIGHT**.

4. Plant tissue culture.
5. Utilisation of radio-active materials in biosynthesis of Phytopharmaceuticals.
6. Classification of crude drugs with appropriate examples.
7. Describe the morphological and microscopical characters of Coriander fruit.
8. A brief note on export potential of medicinal plants in India.
9. Different methods involved in the preparation of volatile oils and their commercial use.
10. Biosynthesis of Anthroquinone glycosides.
11. Write the preparation and uses of absorbant cotton.
12. Vitamins.
13. Describe the source, preparation and uses of cod liver oil.



AUGUST - 2004

[KL 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Sec. A & B : Two hours and  
forty minutes

Sec. A & B : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer Sections A and B in the SAME answer book.

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Define tissue culture. (3)  
(b) Explain different types of cultures. (6)  
(c) Describe the Pharmaceutical applications of tissue culture in the production of secondary metabolites. (6)
2. (a) Classify fibres used in pharmacy. (3)  
(b) How do you distinguish vegetable fibres from animal fibres? (6)  
(c) Describe the preparation and evaluation of regenerated fibres. (6)

3. (a) Define Aristas. (1)  
(b) Explain the principles involved in the preparation of Aristas. (4)  
(c) How do you standardize aristas? (4)  
(d) Briefly describe the production and utilization of vinca alkaloids. (6)

SECTION B — (8 × 5 = 40 marks)

Write short notes on any EIGHT of the following :

4. Extraction of volatile oils.
5. Acetate hypothesis.
6. Applications of quantitative microscopy in pharmacognosy.
7. Preparation of Agar.
8. Applications of chromatography in the identification of phytoconstituents.
9. Ash value and its importance in pharmacognosy.
10. Extractive values.
11. Viscose rayon.
12. Detection of adulterant.
13. Plant growth regulators.

FEBRUARY - 2005

[KM 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Sec. A & B : Two hours and forty minutes

Sec. A & B : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

SECTION A — (2 × 15 = 30 marks)

Answer any TWO questions.

1. (a) Give the classification of crude drugs. (2)  
(b) Discuss in detail the chemical and biological classification of crude drugs with examples. (8)  
(c) What are the basic metabolic pathways? Write any one of them. (5)
2. (a) Discuss on the methods of extraction and the recent techniques of isolation of phytoconstituents. (10)  
(b) Write the identification tests for alkaloids and glycosides. (5)

3. What is tissue culture? Write the applications of tissue culture in pharmacy with special reference to the production of secondary metabolites. (15)

4. (a) What are essential oils? Give the source, preparation, constituents and uses of Fennel? (6)

(b) Write the macro and micro scopical characters of umbeliferous fruits. (3)

(c) Write the source, preparation, constituents and uses of Agar. (6)

SECTION B — (8 × 5 = 40 marks)

Write notes on EIGHT of the following.

5. Use of Radioactive isotopes in the biogenetic studies.
6. Plant growth regulators.
7. Industrial production of menthol.
8. Fermentation technology and its applications in pharmacy.
9. Surgical dressings.

**FEBRUARY - 2005**

10. **Pharmaceutical enzymes.**
  11. **Indian medicinal plants and their export potential.**
  12. **Quality control of crude drugs.**
  13. **Cod liver oil.**
  14. **Biosynthesis of steroidal glycosides.**
-

AUGUST - 2005

[KN 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours                              Maximum : 90 marks

Theory : Two hours and                              Theory: 70 marks  
forty minutes

M.C.Q. : Twenty minutes                              M.C.Q. : 20 marks

I. Long Essay :    (2 × 15 = 30)

Answer any TWO questions :

1. Discuss the applications of Fermentation Technology in production of vitamins. (15)
2. Write a detail note on Chemotaxonomy. (15)
3. Discuss in detail the role of basic metabolic pathways. (15)
4. Elaborate on the role of plant tissue culture of secondary metabolites. (15)

II. Write short notes on any EIGHT of the following :  
(8 × 5 = 40)

1. Role of plant growth regulators in the production of secondary metabolites.
2. Industrial production and Utilizations of citric acid.
3. Biosynthesis of Tropane alkaloids.
4. Use of Viscose rayon and Absorbent cotton in surgical dressings.
5. Chemical microscopy.
6. Preparation and standardization of Aristas.
7. Production of antibiotics by Fermentation.
8. Oils from Umbelliferous fruits.
9. Export potential of Herbal drugs.
10. Preparation of Agar.

FEBRUARY - 2006

[KO 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and  
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay :

(2 × 15 = 30)

Answer any TWO questions only.

1. (a) Explain various methods of isolation of volatile oils from plant drugs. (8)

(b) How Agar is produced from its marine source. Write its chemical tests and uses. (7)

2. (a) Explain the biosynthesis of Tropane alkaloids. (8)

(b) Write a note on the industrial production and utilisation of senna glycosides. (7)

3. (a) Discuss the various steps involved in the establishment of suspension culture from higher plants. (8)

(b) Explain the use of TLC in the isolation and identification of Phyto constituents. (7)

4. (a) Discuss the problems encountered with the standardization of Ayurvedic formulations. (5)

(b) Explain the significance of radioactive isotopes in biogenetic studies. (5)

(c) Give an account on the preparation of surgical catgut. (5)

II. Short notes :

(8 × 5 = 40)

Answer any EIGHT of the following.

1. General characters of umbelliferous fruits.

2. Preparation of Absorbent cotton.

3. Chemotaxonomy.

4. Application of plant growth regulators.

5. Industrial production and utilisation of citric acid.

6. Detection of adulterants in powdered drugs.

## **FEBRUARY - 2006**

- 7. Export potential of Herbal drugs.**
  - 8. Application of fermentation technology.**
  - 9. Microchemical analysis.**
  - 10. Papain – preparation and uses.**
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**AUGUST - 2006**

**[KP 733]**

**Sub. Code : 4224**

**FOURTH B.Pharm. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Paper IV — ADVANCED PHARMACOGNOSY**

**Time : Three hours**

**Maximum : 90 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 70 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**Answer any TWO questions.**

**I. Long Essay : (2 × 20 = 40)**

- 1. Write a note on plant growth regulators and their applications in production of secondary metabolites.**
- 2. Discuss in brief the utilisation of radioactive isotopes in biogenetic studies.**
- 3. Discuss in brief the various systems of classification of crude drugs with merits and demerits.**
- 4. Write a note on chromatographic techniques employed in phytochemical investigations.**

**II. Write short notes on any SIX of the following :  
(6 × 5 = 30)**

- 1. Biosynthesis of steroidal glycosides.**
  - 2. Pharmacognostic scheme of Agar.**
  - 3. Surgical catguts.**
  - 4. Give the preparation and uses of papain.**
  - 5. Production of vitamins by fermentation technology.**
  - 6. Preparation and standardisation of churnas.**
  - 7. Ash and extractive values.**
  - 8. Quantitative microscopy.**
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FEBRUARY - 2007

[KQ 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and  
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. What are Tropane Alkaloids? Write the biosynthesis of all Tropane Alkaloids you have studied.
2. Explain with examples how the secondary metabolites of pharmaceutical importance are produced through Tissue Culture technique.
3. Discuss the role of quantitative microscopy and chemical microscopy in the quality control of crude drugs.
4. Write the source, preparation, chemical identification tests and pharmaceutical uses of Absorbent cotton.

II. Write short notes on any SIX of the following :  
(6 × 5 = 30)

1. Role of radio active isotopes in biogenetic studies.
2. Preparation and standardization of churnas.
3. Export potential of medicinal plants in India.
4. Production of antibiotics through fermentation technology.
5. Various systems of classification of drugs.
6. Application of HPTLC.
7. Preparation and pharmaceutical uses of shark and cod liver oils.
8. Thin layer chromatography.



August-2007

[KR 733]

Sub. Code : 4224

FOURTH B.Pharm. DEGREE EXAMINATION.

(Revised Regulations)

Paper IV — ADVANCED PHARMACOGNOSY

Time : Three hours

Maximum : 90 marks

Theory : Two hours and  
forty minutes

Theory : 70 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

I. Long Essay (Write any TWO) questions :

(2 × 15 = 30)

1. Give an account of the biogenesis of Cardenolides. Write the inter-relationship of purpurea glycosides and lanatosides.
2. Explain the importance of column chromatography and thin layer chromatography in the isolation of crude drugs.
3. Give the preparation and identification test for absorbent cotton.
4. Classify plant growth regulators and discuss their role in production of secondary metabolites.

II. Short notes (Write any EIGHT) questions :

(8 × 5 = 40)

1. Discuss briefly about moisture estimation.
2. Give the source, characters and preparation and constituents of cod liver oil.
3. Discuss briefly about Ash values.
4. Give the principle involved in the standardisation of Aristas.
5. Discuss briefly about viscose rayon.
6. Give an account of the Export potential of Medicinal plants.
7. Composition of a typical tissue culture medium for the production of callus.
8. Quality control of crude drugs.
9. Tracer technique.
10. Surgical Catgus.

February-2008

**[KS 733]**

**Sub. Code : 4224**

**FOURTH B.Pharm. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Paper IV — ADVANCED PHARMACOGNOSY**

**Q.P.Code : 564224**

**Time : Three hours**

**Maximum : 90 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 70 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**I. Long essay :**

**(2 × 15 = 30)**

**Answer any TWO questions.**

**1. Discuss the industrial production and utilization of the following phytoconstituents.**

**(a) Senna glycosides**

**(b) Vinca alkaloids**

**(2 × 7.5 = 15)**

**2. Describe the sources, morphological and microscopical characters, chemical constituents and uses of coriander fruit. Write a note on methods of obtaining volatile oils.**

**(10 + 5 = 15)**

3. Discuss the principles involved in the preparation and standardization of an Ayurvedic formulation churna. (15)

4. (a) Explain shikimic acid pathway and its application.

(b) Give an account on the production and utilization of quinine.

(c) Discuss various methods of evaluation of plant products.

II. Short notes on : (8 × 5 = 40)

Answer any EIGHT questions.

5. (a) Classification of crude drugs.

(b) Serotaxonomy.

(c) Absorbant cotton.

(d) Production and utilization of citric acid.

(e) Application of plant tissue cultural techniques.

(f) Utilization of Radio-active isotopes in phytochemical studies.

(g) Use of Electrophoresis in phytochemical analysis.

(h) Detection of common adulterants in whole and plant powders.

(i) Ligatures.

(j) Application of fermentation technology.

**August 2008**

**[KT 733]**

**Sub. Code : 4224**

**FOURTH B.Pharm. DEGREE EXAMINATION.**

**(Revised Regulations)**

**Paper IV — ADVANCED PHARMACOGNOSY**

**Q.P. Code : 564224**

**Time : Three hours**

**Maximum : 90 marks**

**I. Long Essay : (2 × 20 = 40)**

**Answer any TWO questions only.**

- 1. Explain the Principles and Procedures involved in the standardization of Aristas and Churna. (20)**
- 2. Explain the Biogenetic Pathway leading to the formation of tropane alkaloids in Datura plant. (20)**
- 3. Discuss the various Adsorption Chromatographic techniques used for the identification and extraction and separation of plant constituents. (20)**

**August 2008**

II. Write short notes on the following : (8 × 5 = 40)

Answer any EIGHT questions only 5 marks each.

1. Preparation of Surgical cat gut.
2. Gradient pH extraction of Vinca alkaloids.
3. Detection of Fennel Powder from Coriander powder by microscopical characters.
4. Pectinase and Pectin.
5. Production of Virus free plants by Tissue Culture.
6. Methods of isolation of volatile oil from plant parts.
7. Important plant Drugs exported from India.
8. Plant growth regulators used in Tissue Culture.
9. Extraction of Serna glycosides.
10. Shark - liver oil.

III. Answer any FIVE of the following questions in few sentences : (5 × 2 = 10)

1. How can you get Citric acid from Calcium Citrate obtained from lemon?
2. Mention the important Pharmaceutical products obtained by fermentation.
3. Give the microscopical characters of the umbelliferous fruit part that contains the volatile oil.
4. Mention the spray reagents used to detect alkaloids on T.L.C. plate.
5. Uses of the enzyme Papain.
6. Why Ash Value is an important standard for Root and Rhizomes?
7. Name the alkaloid and give its Biological source, which give a blue fluorescence, in sulphuric acid solution.

**August 2008**

**[KT 753]**

**Sub. Code : 4244**

FOURTH B.Pharm. DEGREE EXAMINATION.

(Regulations 2004)

Paper III — ADVANCED PHARMACOGNOSY

Q.P. Code : 564244

Time : Three hours

Maximum : 90 marks

I. Long Essay : (2 × 20 = 40)

Answer any TWO questions.

1. Discuss in detail the various methods involved in extraction, purification and identification of phytoconstituents of crude drugs.
2. Define natural allergens. How they are classified? Describe the methods of preparation of allergenic extracts.
3. Give an account of the following :
  - (a) Bio synthesis of penicillin.
  - (b) Industrial production of citric acid.

## August 2008

II. Short Notes : (8 × 5 = 40)

Answer any EIGHT questions.

1. Extraction of essential oils.
2. Applications of tissue cultures.
3. Pharmacognostic importance of spectroscopic methods.
4. Shikimic acid pathway.
5. Herbal cosmetics.
6. Pharmaceutical enzymes.
7. Antiviral drugs.
8. Tropane alkaloids.
9. Stability test for herbal extracts.
10. Nutraceuticals.

III. Short Answers : (5 × 2 = 10)

Answer any FIVE questions.

1. Explain the principle involved in Thin Layer chromatography.
2. Write the identification tests for glycosides.

3. Define Tinctures. Name the methods of preparation of tinctures.

4. Name the radioactive isotopes used in biogenetic studies.

5. Write a note on "Bhasmas".

6. Define fungal toxins.

7. Define antibiotics. Mention the therapeutic uses of streptomycin.

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February 2009

[KU 733]

Sub. Code: 4224

**FOURTH B.PHARM. DEGREE EXAMINATION  
(ReRevised Regulations)**

**Candidates Admitted upto 2003-04**

**Paper IV – ADVANCED PHARMACOGNOSY**

**Q.P. Code : 564224**

**Time : Three hours**

**Maximum : 90 marks**

**I. Essay Questions : Answer any TWO questions (2 x 20 = 40)**

1. a) Write a detailed note on plant growth regulators. (5)  
b) How will you determine the growth of a plant. (5)  
c) Highlight the role of plant growth regulators in the production of secondary metabolites. (10)
2. a) Define fermentation techniques? (2)  
b) What are the factors affecting fermentation techniques? (3)  
c) Applications of fermentation techniques. (5)  
d) Write briefly about the industrial production of penicillin by fermentation techniques (10)
3. a) Define Arisras (2)  
b) What are the differences between arisras and asawas? (2)  
c) Explain the procedure and principle involved in the preparation of arisras. (10)  
d) How will you standardize arisras (6)

**II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)**

1. Super critical fluid extraction.
2. Drug stability.
3. Crude fibre content.
4. Biogenetic studies.
5. Export potentials of medicinal plants from India.
6. Production and utilization of quinine.
7. Serotaxonomy.
8. Synthetic fibres.
9. Preparation of pepsin and its uses.
10. Application of chromatography in the identification of phyto constituents.

**III. Short Answers: Answer any FIVE questions (5 x 2 = 10)**

1. Organogenesis.
2. Vein islet numbers.
3. Cotton – Absorbency test I.P.
4. Electro phoresis.
5. Ligatures.
6. Turbido – stat
7. Essential oils.

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August 2009

[KV 733]

Sub. Code: 4224

**FOURTH B.PHARM. DEGREE EXAMINATION**

**(ReRevised Regulations)**

**Candidates Admitted upto 2003-04**

**Paper IV – ADVANCED PHARMACOGNOSY**

***Q.P. Code : 564224***

**Time : Three hours**

**Maximum : 90 marks**

**I. Essay Questions : Answer any TWO questions (2 x 20 = 40)**

1. a) Explain the biosynthesis of tropane alkaloids.  
b) Explain the significance of radioactive isotopes in biogenetic studies.
2. a) Explain with examples how the secondary metabolites of pharmaceutical importance are produced through tissue culture technique.  
b) Discuss the role of quantitative microscopy and chemical microscopy in the quality control of crude drugs.
3. a) Write the source, preparation, chemical identification tests and pharmaceutical uses of absorbent cotton.  
b) Write notes on Chemotaxonomy.

**II. Write Short Notes : Answer any EIGHT questions(8 x 5 = 40)**

1. Plant growth hormones.
2. Serotaxonomy.
3. Paper chromatography.
4. Production of antibiotics by fermentation.
5. Preparation of agar.
6. Export potential of herbal drugs.
7. Detection of adulterants in powdered drugs.
8. Preparation of silk.
9. Ash and extractive values.
10. Briefly explain the preparation of alginate.

**III. Short Answers: Answer any FIVE questions(5 x 2 = 10)**

1. Difference between Aswas and arishtas.
2. Give the source, chemical constituents and uses of shark liver oil.
3. Define glycosides.
4. Define the term totipotence.
5. What are the therapeutic uses of pepsin?
6. Chemical tests for Wool.
7. Give the uses of papain.

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February 2010

[KW 733]

Sub. Code: 4224

**FOURTH B.PHARM. DEGREE EXAMINATION**

**(ReRevised Regulations)**

**Candidates Admitted upto 2003-04**

**Paper IV – ADVANCED PHARMACOGNOSY**

***Q.P. Code : 564224***

**Time : Three hours**

**Maximum : 90 marks**

**I. Essay Questions : Answer any TWO questions (2 x 20 = 40)**

1. a) What is micro chemical analysis? Discuss the role of quantitative microscopy in quality of crude drugs.  
b) Explain different types of cultures.
2. a) Give a detail note on study of plant growth regulators and their role in the production of secondary metabolites.  
b) Production and utilization of citric acid.
3. a) Discuss various chromatography techniques for analyzing phytoconstituents of crude drugs.  
b) Biosynthetic pathway of digoxin.

**II. Write Short Notes : Answer any EIGHT questions (8 x 5 = 40)**

1. Industrial production of menthol.
2. Preparation and uses of papain.
3. Preparation and standardization of churnas.
4. Various systems of classification of drugs.
5. Ash and extractive values.
6. Preparation and pharmaceutical uses of shark and cod liver oils.
7. Thin layer chromatography.
8. Industrial production of senna glycosides.
9. Surgical catgut.
10. Importance of UV and fluorescence analysis of drugs.

**III. Short Answers: Answer any FIVE questions (5 x 2 = 10)**

1. Common adulterants in powdered drugs.
2. Give the source, chemical constituents and uses Alginate.
3. Define arishtas.
4. Chemical tests for Cotton.
5. What are the therapeutic uses of Papain?
6. Define the term totipotency.
7. Give the uses of Agar.

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[KX 733]

September 2010

Sub. Code: 4224

**FOURTH B.PHARM. DEGREE EXAMINATION  
(Re-Revised Regulations) Candidates Admitted upto 2003-04**

**Paper IV – ADVANCED PHARMACOGNOSY**

*Q.P. Code : 564224*

**Time : Three hours**

**Maximum : 90 marks**

**I. Essay Questions : Answer any TWO questions. (2 X 20 = 40)**

1. a) Explain the use of thin layer chromatography in the isolation and identification of phytoconstituents.  
b) Give an account of Isolation of Volatile oils from plants.
2. a) Explain the significance of radio active isotopes in biogenetic studies.  
b) Discuss how the aristas are prepared and standardized.
3. a) Discuss various steps involved in the establishment of callus culture.  
b) Write a note on the industrial production and utilization of citric acid.

**II. Write Short Notes : Answer any EIGHT questions. (8X 5 = 40)**

1. Chemotaxonomy.
2. Plant growth regulator.
3. Surgical catgut.
4. Eletrophoresis.
5. Application of fermentation technology.
6. Production and utilization of Quinine.
7. Synthetic Fibre.
8. Common adulterants in whole drug.
9. Lycopodium spore method.
10. Micropropagation.

**III. Short Answers: Answer any FIVE questions. (5X2 = 10)**

1. Uses of Vinca alkaloids.
2. Biological sources, uses of codliver oil.
3. Biological sources of wool.
4. Define essential oil.
5. Uses of Papain.
6. Define Fermentation technique.
7. Chemical tests for cotton.

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FEBRUARY 2011

[KY 733]

Sub. Code : 4224

**FOURTH B.PHARM. DEGREE EXAMINATION.**

**(Re-Revised Regulations) Candidates Admitted upto 2003–04**

**Paper IV — ADVANCED PHARMACOGNOSY**

*Q. P. Code : 564224*

**Time : Three hours**

**Maximum : 90 marks**

**I. Essay Questions : Answer any TWO questions. (2 x 20 = 40)**

1. (a) Discuss the detailed method of preparation of Arista and Asawa. (14)  
(b) How will you standardise Arista and Asawa for its Alcohol content, specific gravity and pH? (6)
2. (a) Describe the set up of a “Tissue culture laboratory and its equipments in detail. (10)  
(b) Applications of plant tissue culture. (10)
3. (a) How are crude drugs classified? Describe the merits and demerits of different systems of classification. (10)  
(b) Highlight the basic characteristic microscopical features of umbeliferous fruits with examples and diagram. (10)

**II. Write short notes : Answer any EIGHT questions. (8 x 5 = 40)**

1. Preparation and uses of Agar.
2. Production and Utilisation of menthol.
3. Gelatin sponge.
4. Detection of common adulterants in powdered drugs.
5. Methods of Isolation of essential oils from umbelliferous fruits.
6. HPTLC in identification of phytoconstituents.
7. Mevalonic acid pathway in the biosynthesis of terpenes.
8. Cod liver oil.
9. Pectinase.
10. Paper chromatography.

**III. Short Answers : Answer any FIVE questions. (5 x 2 = 10)**

1. Define the term callus culture and protoplast culture.
2. Primary and secondary metabolites.
3. How will you identify Tropane alkaloid and Indole Alkaloids.
4. Give any two applications of HPTLC.
5. Write the source, constituents and uses of viscose rayon and absorbent wool.
6. Microchemical analysis.
7. Stomatal number and stomatal index.

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