

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

(LQ 2056)

MARCH 2020

Sub. Code: 2056

B.PHARM. DEGREE EXAMINATION

PCI Regulation – SEMESTER V

PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY – II

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Write a brief note on basic metabolic pathways leading to the formation of plant secondary metabolites.
2. What are indole alkaloids containing drugs? Discuss about any one of them in detail.
3. Explain the isolation of resin drug containing Anticancer Activity.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Vinca.
2. Bitter Almond.
3. Artemisia.
4. Ruta.
5. Liquorice.
6. Fennel.
7. Catechu.
8. Myrrh.
9. Gentian.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Give examples for secondary metabolites.
2. Define Metabolic Pathway.
3. Define electrophoresis.
4. Write the principle of HPLC.
5. Write the biological source and uses of Taxol.
6. Mention the spray reagent used to detect alkaloids.
7. Give examples for aldehyde containing volatile oil.
8. Give the official source for Mentha oil and how it is isolated from it?
9. Write the source for the four varieties of Aloes.
10. Give examples for the tannin containing drugs.

[BPHARM 0921]

SEPTEMBER 2021
(SEPTEMBER 2020 EXAM SESSION)

Sub. Code: 2056

B.PHARM. DEGREE EXAMINATION
PCI Regulation 2017 – SEMESTER V
PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY – II

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Summarize on Bio-synthesis and application of Digoxin.
2. Describe in detail the collection, constituents with uses and chemical test of Opium.
3. Explain the industrial production and utilization of Tropane alkaloids.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Write a note on the industrial production of Forskolin.
2. Write a note on Dioscorea rhizome.
3. Illustrate the Pharmacognosy and chemistry of Rauwolfia root.
4. Write a note on collection, chemistry and uses of Taxus.
5. Chromatographic techniques used in Plant drug analysis.
6. Explain the term iridoids and give the pharmacognosy of Gentian.
7. Illustrate the isolation and estimation of podophyllotoxin from its sources.
8. Write a note on Fennel and Catechu.
9. Outline the Isolation, Identification and Analysis of menthol.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. How will you identify caffeine in tea dust?
2. What is Competitive feeding?
3. What are carotenoids?
4. Give the structure of Eugenol and Fenchone.
5. Write the basic principles involved in chromatography.
6. Mention the therapeutic use of Bitter almond
7. Write the medicinal uses of Pterocarpus
8. Mention the uses of sennosides
9. Recall the drug used in cerebral malaria give its sources.
10. Sketch the structure of glycyrrhetic acid.

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

[BPHARM 0122]

**JANUARY 2022
(MARCH 2021 EXAM SESSION)**

Sub. Code: 2056

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER V

PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY – II

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Describe in detail about the industrial production of Vincristine and Vinblastine.
2. Discuss the method of collection of Benzoin, its constituents and uses.
3. Briefly discuss about Biogenesis of various Isoprenoid Compounds.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Shikmic Acid Pathway.
2. Lignans.
3. Cinnamon.
4. Colophony.
5. Carotenoids.
6. Opium.
7. Curcumin.
8. Glycyrrhetic acid.
9. Citral.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Pharmaceutical application of Forskolin.
2. Write the biological source and uses of Taxus.
3. Mention the source and constituents of Tea and Ruta.
4. List out Various method of extraction of Volatile oils.
5. Give the official source for podophyllotoxin and how it is commercially significant?
6. Give the examples of phytoconstituents subjected to spectral analysis.
7. Uses of Rauwolfia.
8. Murexide Colour Reaction.
9. Chemical Test for Guggul.
10. Gambier-fluorescein Test.

[BPHARM 0522]

MAY 2022
(SEPTEMBER 2021 EXAM SESSION)

Sub. Code: 2056

B.PHARM. DEGREE EXAMINATION
PCI Regulation 2017 – SEMESTER V
PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY – II

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Discuss the method of extraction and the recent techniques of Isolation of phytoconstituents.
2. Elaborate on Industrial production of Podophyllotoxin.
3. Write briefly about the pharmacognosy of Digitalis.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Rauwolfia.
2. Tea.
3. Dioscorea.
4. Clove.
5. Pterocarpus.
6. Benzoin.
7. Senna.
8. Carotenoids.
9. Super Critical Fluid Extraction.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Write the use of Clevenger apparatus?
2. Define the term extraction with examples.
3. Name the alkaloids of Vinca.
4. Write the Identification test for Atropine.
5. Write the constituents and uses of Bitter almond.
6. Outline the source and uses of Artemisia and Gentian.
7. List out any two basic metabolic pathways.
8. Define Autoradiography.
9. Give the chemical test for Myrrh?
10. Write the Principle of paper chromatography.

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[BPHARM 1022]

**OCTOBER 2022
(MARCH 2022 EXAM SESSION)**

Sub. Code: 2056

B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)

PCI Regulation 2017 – SEMESTER V

PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY II

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Discuss the modern methods involved in the extraction of phytoconstituents.
2. Define and classify glycosides. Write a note on Digitalis.
3. Write the methods of isolation and identification of
 - a) Quinine
 - b) Glycyrrhetic acid.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain about acetate pathway.
2. Write a note on clove.
3. Discuss the method of isolation and identification of Curcumin.
4. Give an account on industrial method of production and utilization of Sennosides.
5. Write the biological source, chemistry and applications of Taxus.
6. Write a note on any one Solanaceous drug.
7. Give an account various method of feeding radioactive isotopes into plants.
8. Write a note on production of Podophyllotoxin.
9. Describe the biological source, chemistry and uses of Gentian.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What is the principle involved in counter current extraction?
2. Name the steroidal resin used as antihyperlipidemic and write its biological source.
3. How the deoxy sugar in digitalis is identified?
4. Write the chemical constituents and uses of Asafoetida.
5. Write the biological source and uses of Curcumin.
6. Mention the uses of Diosgenin.
7. Write the chemical constituents and uses of Sarpagandha root.
8. Name the secondary metabolites, biosynthesized through shikimic acid pathway.
9. Write the structure and uses of Artemisinin.
10. Mention the general chemical tests used for the identification of alkaloids.

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

[B.PHARM 0823]

**AUGUST 2023
(MARCH 2023 EXAM SESSION)**

Sub. Code: 2056

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER V
PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY II**

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Enumerate the biosynthesis of secondary metabolites through shikimic acid pathway.
2. Define and classify alkaloids. Explain about Vinca.
3. Write the industrial methods of production and utilization of
 - a) Diosgenin
 - b) Taxol.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write the chemistry and utilization of Opium.
2. What are resins? Give an account on Guggul.
3. Discuss the isolation and identification of Menthol.
4. Summarize the applications of spectral studies in the identification of phytoconstituents.
5. Differentiate Pale and Black Catechu.
6. Write a note on utilization of radioactive isotopes in the investigation of biogenetics studies.
7. Give an account on isolation and analysis of Quinine.
8. Write a note on super critical fluid extraction and its applications.
9. Summarize the pharmacognosy of Fennel.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Write the biological source and uses of Rutin.
2. Mention the different methods of extraction of volatile oils.
3. Give the applications of HPTLC.
4. Name the secondary metabolites produced through acetate pathway.
5. Write the chemical constituents of Digitalis.
6. Name and draw the structure of sesquiterpene lactone used as antimalarial drug.
7. Mention the biological source and uses of Bitter Almond.
8. Write the identification test for Atropine.
9. Define electrophoresis.
10. Write the structure and uses of Forskolin.

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[B.PHARM 1223]

**DECEMBER 2023
(SEPTEMBER 2023 EXAM SESSION)**

Sub. Code: 2056

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER V
PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY II**

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Describe various methods for elucidation of biosynthetic pathways.
2. What are cardiac glycosides? Write the bio source, chemistry, chemical classes and therapeutic uses of Digitalis.
3. Explain industrial production, estimation and utilization of Atropine.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Describe Autoradiography and competitive feeding.
2. Describe the Pharmacognosy of Guggul.
3. Give the biological source, Chemical constituents and uses of any two volatile oil drugs.
4. Write the isolation and estimation of Glycyrrhetic acid.
5. Describe industrial production and estimation of Diosgenin.
6. Explain the role of column chromatography in isolation and purification of phytoconstituents.
7. List the application of electrophoresis in isolation of crude drugs.
8. Write the pharmacognosy of pterocarpus.
9. Write the estimation and uses of sennosides.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Liquid scintillation counter.
2. Write botanical source and uses of any one drug belonging to the family Liliaceae.
3. Write botanical source and chemical constituents of Gentian.
4. Add a note on taxol.
5. Utilization of Vinca alkaloids.
6. List the applications of HPTLC.
7. Give the chemical structure Quinine and Caffeine.
8. Give the adulterants of Clove bud.
9. Write a note on lignans.
10. Discuss the percolation.

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

[B.PHARM 0524]

MAY 2024

Sub. Code: 2056

**B.PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER V
PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY II**

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Describe the collection, constituents with uses and chemical test of Digitalis leaf.
2. Explain the significance of radioactive isotopes in investigation of biogenetic studies.
3. Elaborate on various chromatographic techniques employed in phytochemical analysis.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Write a note on Asafoetida.
2. Explain the term alkaloids and recall the general chemical test for alkaloids.
3. Summarize the use of electrophoresis in phytochemical analysis.
4. Write a note on Clove.
5. Mention the chemical constituents and therapeutic use of fennel and senna.
6. Summarize the constituents and uses of Pterocarpus and Guggul.
7. Mention biosources, therapeutic uses of Bitter Almond and Carotenoids.
8. Outline line Isolation, Identification and Analysis of Curcumin.
9. Summarize the Industrial production and utilization of Sennosides.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. Recall Mydriatic drug isolated from plant origin with structure.
2. Give the structure of Rutin.
3. Mention the uses of Colophony.
4. Recall the constituents of Ginger.
5. What are Lignans?
6. Mention the spray reagents used to detect aminoacids.
7. Write the confirmatory test for Aloes.
8. Write the therapeutic use of Artemisinin.
9. Mention the constituents of Opium.
10. Write therapeutic use of Forskolin.

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

[B.PHARM 1024]

OCTOBER 2024
(SEPTEMBER 2024 EXAM SESSION)

Sub. Code: 2056

B. PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER V
PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY II

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Enumerate the various methods of extraction and explain in detail about Supercritical fluid extraction.
2. Outline the Industrial production and pharmaceutical application of Vinca alkaloids.
3. Summarize on bio-synthesis of aromatic amino acids by shikimic acid pathway.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Discuss the industrial production and utilization of Sennosides.
2. Write a note on Benzoin.
3. Explain the term Tannin and compare Pale and Black Catechu.
4. Explain Mevalonic acid pathway in the biosynthesis of terpenes.
5. Compare and contrast Aloes and Senna.
6. Outline the role of Infrared spectroscopy in the evaluation of plant constituents.
7. Explain the collection, chemistry with chemical test and uses of Belladonna leaf.
8. Write a note Taxus and Rawolfia.
9. Outline the Isolation, Identification and Analysis of Glycyrrhetic acid.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What is Autoradiography?
2. Recall the uses of Ruta and Liquorice.
3. Enumerate the uses of Clove.
4. Mention the constituents of Tea leaf.
5. What is Artemisinin?
6. What are flavonoids? Give examples.
7. Write the therapeutic uses of Myrrh.
8. Explain the term iridoids with examples.
9. Mention the crude drug used as bronchodilator and give its sources.
10. Mention the phytoconstituent responsible for synthesis of steroids with sources.

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

[B.PHARM 0325]

MARCH 2025

Sub. Code: 2056

**B. PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
PCI Regulation 2017 – SEMESTER V
PAPER IV – PHARMACOGNOSY AND PHYTOCHEMISTRY II**

Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions.

(2 x 10 = 20)

1. Write the biological source, morphology, microscopy, chemical constituents, uses, adulterants and substitutes of Senna.
2. Describe in detail about industrial production, estimation and uses of Caffeine.
3. Enumerate the various methods of extraction and explain in detail about Supercritical fluid extraction.

II. Write notes on: Answer any SEVEN questions.

(7 x 5 = 35)

1. Write a note on Shikimic acid pathway and its significance.
2. Describe the macroscopy and microscopy of Coriander.
3. Write the biological source, Chemical constituents and uses of Taxus and Dioscorea.
4. Write a note on Benzoin.
5. Discuss the industrial production and estimation of forskolin.
6. Write a note on paper electrophoresis.
7. Write the biological source, chemical constituents and therapeutic uses of Aloes.
8. Write the isolation and identification of Quinine.
9. Write a note on hot percolation Soxhlet extraction process.

III. Short answers on: Answer ALL questions.

(10 x 2 = 20)

1. Define secondary plant metabolite with suitable examples.
2. Write a note on amino acid pathway.
3. Write the botanical source and chemical constituents of Tea.
4. Name two organized drugs and write their botanical source and uses.
5. Chemical tests for Asafoetida.
6. Give the structure of Reserpine.
7. Define chromatography and write its significance.
8. Write the biological source and uses of clove.
9. Write chemical constituent and uses of Mentha.
10. Give the identification test for Atropine.

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[B.PHARM 0925]

SEPTEMBER 2025

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**B. PHARMACY DEGREE COURSE (SEMESTER EXAMINATIONS)
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Q.P. Code: 562056

Time: Three hours

Maximum: 75 Marks

I. Elaborate on: Answer any TWO questions. (2 x 10 = 20)

1. Write the biological source, morphology, microscopy, chemical constituents, uses, adulterants and substitutes of Cinnamon.
2. Explain industrial method of production and estimation of Podophyllotoxin and Atropine.
3. What is microwave-assisted extraction; describe its process, applications, advantages and disadvantages.

II. Write notes on: Answer any SEVEN questions. (7 x 5 = 35)

1. Explain the steps involved in acetate pathway.
2. Give the macroscopy and microscopy of Rauwolfia.
3. Give the biological source, Chemical tests and uses of Myrrh.
4. Write a note on Vinca.
5. Explain the industrial production and uses of Artemisinin.
6. Write the chemical tests for glycosides.
7. Write down the biological source, family, cultivation and collection and chemical constituents of opium.
8. Describe the isolation and identification of Citral.
9. Write a note on thin layer chromatography.

III. Short answers on: Answer ALL questions. (10 x 2 = 20)

1. What is basic metabolic pathway?
2. Write the therapeutic use of Taxol.
3. Write the applications of HPTLC.
4. Write the chemical test for Guggul.
5. Mention the source and constituents of Bitter almond.
6. Write a note on paper chromatography.
7. Give the structure of vincristine and vinblastine.
8. Give examples for the volatile oil containing drugs.
9. Define extraction. Give examples.
10. Write a note on UV and visible spectroscopy.
