

[LB 4261]

AUGUST 2012

Sub. Code: 4261

**THIRD YEAR B.PHARM. EXAM**

**Paper - I PHARMACOGNOSY AND PHYTOCHEMISTRY**

**Q.P. Code : 564261**

**Time: Three hours**

**Maximum: 100 Marks**

**(180 Min) Answer ALL questions in the same order.**

**I. Elaborate on:**

**Pages Time Marks  
(Max.)(Max.)(Max.)**

- |   |    |    |    |
|---|----|----|----|
| 1. Write the pharmacognosy of the following drugs.<br>(a) Indian hemp (b) Benzoin.  | 19 | 33 | 20 |
| 2. (a) Explain the preparation of starch from various sources.<br>(b) Write the biological source, preparation, chemical constituents, tests for identification and uses of tragacanth. | 19 | 33 | 20 |

**II. Write notes on:**

- |   |   |   |   |
|---|---|---|---|
| 1. Plant growth inhibitors.   | 3 | 8 | 5 |
| 2. Life cycle of ergot.   | 3 | 8 | 5 |
| 3. Adulterants of clove.  | 3 | 8 | 5 |
| 4. Detailed study of a drug containing C-glycoside.                                   | 3 | 8 | 5 |
| 5. Compare microscopical characters of coriander and fennel.                          | 3 | 8 | 5 |
| 6. Bees wax.  | 3 | 8 | 5 |
| 7. Write the source and uses for the following drugs.<br>(a) Arjuna (b) Shankapushpi. | 3 | 8 | 5 |
| 8. Hypoglycemic drug.   | 3 | 8 | 5 |

**III. Short Answers:**

- |  |   |   |   |
|--|---|---|---|
| 1. Identification tests for saponin glycosides.                      | 1 | 5 | 2 |
| 2. Source and uses of margosa oil.                                   | 1 | 5 | 2 |
| 3. Name of manipulated opium.  | 1 | 5 | 2 |
| 4. Identification test for tropane alkaloids.                        | 1 | 5 | 2 |
| 5. Source of a fixed oil containing vitamin A.                       | 1 | 5 | 2 |
| 6. What are stone cells? Name any two drugs containing stone cells.  | 1 | 5 | 2 |
| 7. Why cascara bark is to be stored for atleast one year before use? | 1 | 5 | 2 |
| 8. Define vein-islet number and vein termination number.             | 1 | 5 | 2 |
| 9. Murexide test.  | 1 | 5 | 2 |
| 10. Chemical constituents of silk.                                   | 1 | 5 | 2 |

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[LC 4261]

FEBRUARY 2013

Sub. Code: 4261

**THIRD YEAR B.PHARM. EXAM**

**Paper - I PHARMACOGNOSY AND PHYTOCHEMISTRY**

**Q.P. Code : 564261**

**Time: Three hours**

**Maximum: 100 Marks**

**(180 Min)**

**I. Elaborate on:**

**(2x20=40)**

- 1). Explain in detail the source, family, cultivation, collection, macroscopy, microscopy, chemical constituents, chemical tests, uses, substitutes, adulterants and storage of Digitalis leaves. (20 Marks)
- 2 a) Define evaluation. What are the different methods of evaluation of crude drugs? Explain about macroscopic evaluation of crude drugs in detail. (15 Marks)
- b) Write about biological evaluation with examples. (5 Marks)

**II. Short notes**

**(8 x 5 = 40)**

- 1) Give a note on chemotaxonomy and serotaxonomy.
- 2) General methods of pest control and examples of natural pesticides.
- 3) Life cycle of Ergot
- 4) Constituents of Opium
- 5) Differences between Indian Senna and Alexandrian Senna
- 6) Write about glyco-alkaloid containing drug
- 7) Gelatin sponge
- 8) Starch and its derived products

**III. Short answers**

**(10 x 2 = 20)**

- 1) What is vitreous Aloes and Hepatic Aloes?
- 2) Source, family, constituents and uses of Rauwolfia.
- 3) Keller-Kiliani test
- 4) Uses of Castor oil
- 5) Write the source for the four varieties of Aloes.
- 6) Give two chemical tests for identification of saponins.
- 7) Write two differences between Pale and Black Catechu.
- 8) Define Stomatal number and Stomatal Index.
- 9) What are cystoliths?
- 10) Give the chemical structure of Caffeine.

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**(LD 4261)**

**AUGUST 2013**

**Sub. Code: 4261**

**THIRD YEAR B.PHARM. EXAM**

**PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

***Q.P. Code: 564261***

**Time: Three Hours**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X20=40)**

1. Describe the microscopical characters, cultivation, collection, chemical tests, substitutes and adulterants of Cinchona.
2. Discuss the factors responsible for cultivation of medicinal plants with examples. Describe the Processing, storage and preservation of crude drugs.

**II. Write notes on:**

**(8X5=40)**

1. Sutures and Ligatures.
2. Differentiate Pale catechu and Black catechu.
3. Chemical tests for agar.
4. Explain pharmacological classification of crude drugs with suitable examples.
5. Discuss the different types of adulteration.
6. Allied drugs and substitutes used in clove.
7. Rice bran oil and eucalyptus oil.
8. Describe the natural colours used in pharmaceutical industry

**III. Short Answers on:**

**(10X2=20)**

1. Saffron
2. Bhilwa
3. Coleus
4. Cocoa
5. Brahmi
6. Oxidised cellulose
7. Amla
8. Keller-Kiliani test
9. Cardiac glycoside drug
10. Tobacco

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(LE 4261)

FEBRUARY 2014

Sub. Code: 4261

**THIRD YEAR B.PHARM. EXAM**

**PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

*Q.P. Code: 564261*

**Time: Three Hours**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X20=40)**

1. How crude drugs are classified? Explain Pharmacological and chemical classifications with examples. Define chemotaxonomy and Serotaxonomy
2. a). Define 'Pharmacognosy'. Enumerate future scope of Pharmacognosy.  
b). List the crude drugs of marine origin. Explain the source, collection, preparation, constituents and uses of any one of them.

**II. Write notes on:**

**(8X5=40)**

1. How crude drugs are preserved? Give few examples
2. Name the factors influencing cultivation
3. Biological evaluation of crude drugs
4. How the adulterants of honey are detected?
5. A lipid from animal source
6. Name different varieties of aloes and their sources
7. Anti hypertensive drug of plant origin
8. Antihepatotoxic drugs

**III. Short Answers on:**

**(10X2=20)**

1. Source and use of Bentonite
2. Preparation and use of Gelatin sponge
3. Non-absorbable sutures
4. Biological source, constituents and uses of Amla
5. Define 'crude drugs' and 'Unorganised drugs'
6. What are adaptogens? How they work?
7. Classify fixed oils
8. Extraction of Medicinal castor oil
9. Sources of crude drugs used for steroidal synthesis
10. Source, constituents and uses of "Ma-Huang"

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(LF 4261)

AUGUST 2014

Sub. Code: 4261

**THIRD YEAR B.PHARM. EXAM  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 marks**

**I. Essay:**

**(2X20=40)**

1. Describe the microscopical characters, cultivation, collection, chemical tests, substitutes and adulterants of Cinnamon.
2. Discuss different types of adulteration of crude drugs. How will you evaluate crude drugs by microscopical and physical methods with examples?

**II. Short notes:**

**(8X5=40)**

1. Define natural pesticide. Explain any two
2. Differentiate Tolu balsam and peru balsam
3. Explain chemical classification of crude drugs with suitable examples
4. Discuss the natural colours used in pharmacy
5. Manufacture of clove oil
6. Chemical test for acacia
7. Allied drugs and substitutes used in senna
8. Describe the cultivation and collection of opium

**III. Short answers:**

**(10X2=20)**

1. Chemical tests for saponins
2. Spirulina
3. Gelatin sponge
4. Two examples of plants with anti hepatotoxic drugs
5. Arjuna – Botanical source and uses
6. Two important diagnostic features of coriander
7. Chemical tests for cardiac glycosides
8. Goldbeater's skin test
9. Ligature
10. Coleus forskoli – common name and uses

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(LG 4261)

FEBRUARY 2015

Sub. Code: 4261

**THIRD YEAR B.PHARM. EXAMINATION  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 marks**

**I. Essay:**

**(2 x 20 = 40)**

1. Discuss the factors influencing cultivation of medicinal plants. Write a note on plant growth regulators and natural pesticides.
2. Write the Biological source, family, cultivation, collection, constituents chemical tests and uses of Clove and Senna.

**II. Short notes:**

**(8 x 5 = 40)**

1. Quantitative microscopy
2. Differences between Tragacanth and Sterculia Gum
3. Tropane alkaloids
4. Umbelliferous fruits – their characteristic features
5. Plants with oral hypoglycemic activity
6. Difference between Cotton and Nylon
7. Kaolin
8. Pyrethrum

**III. Short answers:**

**(10 x 2 = 20)**

1. Source, family, constituents and uses of Squill
2. Isoquinoline alkaloids and their uses
3. Constituents and chemical tests for Nux Vomica
4. How is the pungency of Ginger and Capsicum destroyed?
5. Biological source, constituents and uses of ginseng
6. What is artificial silk? Give other names for it.
7. How is oxidized cellulose prepared?
8. Give two examples of natural colour and their source
9. What is the major constituent of Peppermint oil? How it is isolated?
10. Source, family, constituents and uses of Ginger

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**B.PHARM. DEGREE EXAMINATION**

**THIRD YEAR**

**PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

*Q.P. Code: 564261*

**Time : Three Hours**

**Maximum : 100 marks**

**Answer All Questions**

**I. Essay:**

**(2 x 20 = 40)**

1. Explain in detail the source, cultivation, collection, macroscopy, microscopy, constituents, chemical tests, uses, adulterants and storage of Digitalis.
2. a) Define alkaloids: Give chemical classification with examples, write about any one quinoline alkaloid containing crude drug.  
b) What are solanaceous alkaloids and write their general characters and explain about any one.

**II. Short notes :**

**(8 x 5 = 40)**

1. Oral hypoglycemic drug.
2. Balsamic resinous drug.
3. Anti hypertensive drug.
4. Agar.
5. Sutures and Ligatures
6. Gelatin sponge.
7. Write the differences between fennel and coriander.
8. Animal fibres used in pharmacy.

**III. Short answers:**

**(10 x 2 = 20)**

1. Define stomata and its types.
2. Write the source for the four varieties of aloes.
3. Amla – Source, Family constituents & uses.
4. Define swelling factor of Isapgol.
5. Gokhru – Source, Family constituents and uses.
6. How will you differentiate silk and wool.
7. Name the drug used as Rat poison. Write its source and family.
8. Biological source of Bhilwa and Brahmi.
9. Borntrager's test.
10. What are stone cells? Name any two drugs containing stone cells.

(LI 4261)

FEBRUARY 2016

Sub. Code: 4261

**THIRD YEAR B.PHARM. EXAMINATION  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

***Q.P. Code: 564261***

**Time: Three hours**

**Maximum: 100 Marks**

**I. Essay:**

**(2 x 20 = 40)**

1. Define Pharmacognosy. Write the different methods of classification of crude drugs with examples.
2. Write the source, family, cultivation, collection, macroscopy, microscopy, constituents, uses, substitutes and adulterants of OPIUM.

**II. Short notes:**

**(8 x 5 = 40)**

1. ISAPGOL.
2. Nux-moschata.
3. Jesuit's bark.
4. Vasaka.
5. Any one steroidal alkaloid.
6. Asthma Weed.
7. Adulterants of Saffron.
8. Storage and Preservation of Crude drugs.

**III. Short answers:**

**(10 x 2 = 20)**

1. Gambier Flourescein Test.
2. Uses of Heavy Kaolin and Light Kaolin.
3. Modified Borntrager's test.
4. Define Palisade Ratio.
5. Why the Shark liver oil is not genuine substitute for Cod liver oil?
6. Rosin.
7. Source and Family of LAHSUN.
8. Combined Umbelliferone test.
9. Constituents and uses of Brahmi.
10. Chemical test for Honey.

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(LJ 4261)

AUGUST 2016

Sub. Code: 4261

**B.PHARM. EXAMINATION  
THIRD YEAR  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on :**

**(2 x 20 = 40)**

1. a) What are Indole alkaloid containing drugs? Discuss about any one of them in detail.  
b) What are Resins? Discuss about their properties and explain about any one in detail.
2. Explain in detail the source, family cultivation, collection, macroscopy, microscopy, chemical constituents, uses, substitutes and adulterants of Fennel.

**II. Short notes on :**

**(8 x 5 = 40)**

1. Explain pharmacological classification of crude drugs with suitable examples.
2. Spirullina.
3. Life cycle of ergot.
4. Castor oil.
5. a) Seliwinoff's test    b) Keller Killiani test.
6. Natural colours.
7. Note on Ginger.
8. Differentiate Indian senna and Alexandrian senna.

**III. Short answers on :**

**(10 x 2 = 20)**

1. Define Pharmacognosy.
2. Source and uses of Kurchi.
3. Trichomes and its types.
4. Write any two differences between cinnamon Zeylanicum and cinnamon cassia.
5. Define Stomatal Number and Stomatal Index.
6. Source and uses of Nutmeg.
7. Constituents and uses of Nux-vomica.
8. Chemical test for Tropane Alkaloids.
9. Any two differences between volatile oil and fixed oil.
10. Constituents of pyrethrum.

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(LK 4261)

FEBRUARY 2017

Sub. Code: 4261

**B.PHARM. EXAMINATION  
THIRD YEAR  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 Marks**

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

1. Explain in detail the source family, cultivation, collection, macroscopy, microscopy, chemical constituents, chemical tests and uses of Coriander.
2. Briefly discuss various systems of classification of crude drugs from natural origin with examples.

**II. Write notes on:** **(8 x 5 = 40)**

1. History and scope of Pharmacognosy.
2. Hepatoprotective drug.
3. Advantages and disadvantages of cultivated drugs over wild source.
4. Vinca.
5. Natural pesticide. Elaborate on any one.
6. Adulterants of clove.
7. Rauwolfia.
8. Biological evaluation.

**III. Short answers on:** **(10 x 2 = 20)**

1. Define Vein Islet Number and Veinlet Termination Number.
2. Murexide Test.
3. Source and uses of Shark liver oil.
4. Gymnema – Source and family.
5. Source, family, constituents and use of any one protein drug.
6. Different types of Starch and its uses.
7. Kurchi – Constituents and uses.
8. Adulterants and substitutes of Nux-vomica.
9. Classify Cardiac glycoside based on lactone ring. Give one example for each.
10. Pthalleoquin Test.

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(LL 4261)

AUGUST 2017

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**B.PHARM. DEGREE EXAMINATION  
THIRD YEAR  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY  
*Q.P. Code: 564261***

**Time: Three hours**

**Maximum: 100 Marks**

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

1. What are Cardiac Glycosides? Classify them with examples. Discuss the source family, cultivation, collection, macroscopy, microscopy, chemical constituents, uses, substitutes and adulterants of Digitalis.
2. Define Fibres. Classify them and write their general chemical tests. Explain in detail about any one Plant Fibre and Animal Fibre.

**II. Write notes on:** **(8 x 5 = 40)**

1. Methods of pest control.
2. Gelatin.
3. Steroidal saponin.
4. Any one pharmaceutical aid.
5. General characters of Tropane alkaloid.
6. Constituents of opium.
7. Taxol.
8. Phyllanthus niruri.

**III. Short answers on:** **(10 x 2 = 20)**

1. Difference between chemical test of Ginger and Capsicum.
2. Any two adulterants of Saffron.
3. Structure of Eugenol.
4. What are cystoliths?
5. Source, family, constituents and uses of Lobelia.
6. Chemical test for strychnine and Brucine.
7. Source, family, constituents and uses of Agar.
8. Constituents and uses of Cod liver oil.
9. Gold beaters skin test.
10. Any two powder microscopy characters of cinnamon.

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(LM 4261)

FEBRUARY 2018

Sub. Code: 4261

**B.PHARM. DEGREE EXAMINATION  
THIRD YEAR  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY  
*Q.P. Code: 564261***

**Time: Three hours**

**Maximum: 100 Marks**

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

1. Explain in detail the sources, cultivation, collection, microscopy, constituents, uses substitutes and adulterants of Cinchona.
2. a) Define pharmacognosy, enumerate the present status and future scope of pharmacognosy.  
b) How crude drugs are processed and stored with few examples.

**II. Write notes on:** **(8 x 5 = 40)**

1. Digitalis.
2. Sutures and ligatures.
3. Explain any one alkaloidal amine crude drug.
4. Liquorice.
5. Discuss the factors influencing cultivation of medicinal plants.
6. Isabgol.
7. Balsamic resinous drug.
8. Microscopical evaluation.

**III. Short answers on:** **(10 x 2 = 20)**

1. Define organized and unorganized crude drug.
2. Two important diagnostic features of clove.
3. Test for reducing sugar.
4. Constituents of opium.
5. List out any two indole alkaloid crude drugs and their source.
6. Two differences between pale and black catechu.
7. Source and constituents of silk and wool.
8. Chrysanthemum cinarariifolium – common name of the crude drug and its uses.
9. Structure of Ephedrine.
10. How is oxidized cellulose prepared?

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**B.PHARM. DEGREE EXAMINATION  
THIRD YEAR  
PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**

*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(2 x 20 = 40)**

1. a) How crude drugs are classified? Explain Pharmacological and chemical classifications with examples.  
b) Discuss the different methods of cultivation used for propagating medicinal plants.
2. a) Write the source, macroscopic characters, identification tests and clinical uses of a drug containing anthraquinone glycosides.  
b) What is manipulated Opium? Describe the collection of opium in India. Write its constituents and uses.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Write note on Nuxvomica.
2. Describe the life cycle of ergot. Give an account of its active constituents and therapeutics uses.
3. How medicinal castor oil is prepared from its source? How will you identify its purity?
4. Explain the: (i) Murexide test (ii) Vitalis test.
5. Scope of Pharmacognosy.
6. Difference between Fennel and coriander.
7. Crude drug from mineral origin.
8. Fibres used in Pharmacy.

**III. Short answers on:**

**(10 x 2 = 20)**

1. How is the pungency of Ginger destroyed?
2. Why cascara bark is to be stored for at least one year before use?
3. Source and uses of Margosa oil.
4. What is clove stalk?
5. Why the shark liver oil is not genuine substituent for cod liver oil?
6. Write the constituents and uses of Devils dung.
7. Trichomes and its type.
8. Define Aleurone grains.
9. Write any two difference between *Cinnamomum zeylanicum* and *Cinnamomum cassia*.
10. Give the examples for Resins and its uses.

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

(LO 4261)

FEBRUARY 2019

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**B.PHARM. DEGREE EXAMINATION**  
**THIRD YEAR**  
**PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**  
*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 Marks**

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

1. Explain in detail the sources, cultivation, collection, microscopy, constituents, uses, substitutes and adulterants of senna.
2. a) Write in detail about the crude drugs of mineral origin.  
b) Discuss the collection and processing of medicinal castor oil.

**II. Write notes on:** (8 x 5 = 40)

1. How crude drugs are classified and explain alphabetical and biological method of classification?
2. Discuss Natural pesticides.
3. Outline the morphological characters of umbelliferae family fruits with diagrammatic representation.
4. Summarize the saponin glycosides crude drugs by therapeutic use and mention its constituents.
5. Write a note on oral hypoglycemic drug with its constituents.
6. Discuss the method of collection of Benzoin and its constituents and uses.
7. Write about various types of ash Value and its significance.
8. Write a note on Quantitative Microscopy.

**III. Short answers on:** (10 x 2 = 20)

1. Define Tannins and Glycosides with examples.
2. Mention the source and constituents of myrobalan and Gambier.
3. Name the sources of dill and caraway.
4. State the constituents of vinca and taxol and draw the structure of anyone.
5. Write the constituents of Kurchi bark and twigs of Indian hemp.
6. Name the chemical reagent used to destroy the pungency of ginger and capsicum.
7. List the crude drugs used as mydriatic and anti rheumatic agent.
8. Compare Ligatures and sutures with examples.
9. Outline the sources and uses of Artemisia and Neem.
10. Enumerate the various types of calcium oxalate crystals in crude drugs.

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

(LP 4261)

AUGUST 2019

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**B.PHARM. DEGREE EXAMINATION**  
**THIRD YEAR**  
**PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**  
*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 Marks**

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

1. Discuss the factors responsible for cultivation of medicinal plants with examples. Describe the processing, storage and preservation of crude drugs.
2. Define Alkaloids. Give chemical classification with examples, write about any one quinoline and Indole alkaloid containing crude drug.

**II. Write notes on:** (8 x 5 = 40)

1. Detailed study of a drug containing C-glycoside.
2. Give a note on chemotaxonomy and serotaxonomy.
3. Discuss the different types of adulteration.
4. Anti hypertensive drug of plant origin.
5. Plants with oral hypoglycemic activity.
6. What are Resins? Discuss about their properties and explain about any one in detail.
7. Any one pharmaceutical aid.
8. Differentiate Indian senna and Alexandrian senna.

**III. Short answers on:** (10 x 2 = 20)

1. Define stomata and types of stomata.
2. Name different types of starch with diagram.
3. Tests for cardiac glycoside.
4. What are the precautions to be taken during the collection of opium?
5. Thalloquine test.
6. Define Palisade Ratio.
7. Allied drugs and substitutes of clove.
8. Source, constituents and uses of “Ma-Huang”.
9. Define natural pesticide. Give any two examples.
10. Classification of crude drug.

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

(LQ 4261)

FEBRUARY 2020

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**B.PHARM. DEGREE EXAMINATION**  
**THIRD YEAR**  
**PAPER I – PHARMACOGNOSY AND PHYTOCHEMISTRY**  
*Q.P. Code: 564261*

**Time: Three hours**

**Maximum: 100 Marks**

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

1. Describe the source, cultivation, collection, macroscopy, microscopy, constituents, uses, adulterants and substitute of Fennel.
2. Write the source, cultivation, collection, macroscopy and microscopy, constituents, uses, adulterants and substitute of Digitalis.

**II. Write notes on:** (8 x 5 = 40)

1. Collection methods for bark crude drugs.
2. Collection methods of Opium.
3. Macroscopy of Vinca.
4. Microscopy study of Nuxvomica.
5. Microscopical evaluation.
6. Preparation of Silk.
7. Glycoalkaloids type of crude drug.
8. Requirements for cultivating Cinnamon.

**III. Short answers on:** (10 x 2 = 20)

1. Vitali Morin's test.
2. Modified Borntrager's test.
3. Source of Ginseng.
4. Adulterants and substitutes of coffee.
5. Source of Lemon grass oil.
6. Any two herbal pesticides.
7. Constituents of liquorice.
8. Source of Cocoa.
9. Any two crude drugs for resin.
10. Adulterants of clove.

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