CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations March 2023

Programme: M. Pharm. (Pharmacognosy) **Session: 2022-23**

Semester: First **Max. Time: 3 Hours**

Course Title: Phytochemistry **Max. Marks: 75**

Course Code: MPG 103T

Instructions:

1. Question no. 1 has Seven parts and students are required to attempt any five. Each part carries three Marks.
2. Question no. 2 to 5 have three parts and students are required to attempt any two parts of each question. Each part carries seven and half marks.

1. a) Define the terms: *Biosynthesis*, *Primary* and *Secondary metabolites.*
   b) Give the occurrence, Chemical structure, characteristic feature of *Caffeine*.
   c) Differentiate between *Successive* and *Exhaustive extraction.*
   d) Define *Cucurbaticins* and *Coumarins*. Give suitable examples.
   e) Draw the Chemical structures of *Citral, Nicotine and Quinine*.
   f) What do you understand by the term "*Phytochemical fingerprinting*".
   g) Write down the IR values of functional groups of Luteolin and Carvone. **(5X3=15)**

2. a) Discuss the role of Radio tracer techniques in the biosynthesis of secondary plant metabolites.
   b) Give the occurrence, Chemical structure, isolation and characterization of Piperine.
   c) What are Steroids? Discuss the source, chemical structure and significance of Withanolides. **(2X7.5=15)**

3. a) What is Lead compound? Discuss the steps of drug discovery and development process.
   b) Discuss the role of UV, IR, NMR and MS in the structure elucidation of Menthol.
   c) Discuss various parameters involved in selection of method and choice of solvents for Extraction. **(2X7.5=15)**

4. a) Enumerate the characteristic IR Values of Kaempferol and Nicotine
   b) Describe the principle, working and application of Microwave Assisted Extraction (MAE) technique.

c) Describe the merits and limitations of Super Critical Fluid Extraction (SCFE).

(2X7.5=15)

5. a) Discuss history of herbs as a source drugs and drug discovery.

b) Explain the Working and application of GCMS in chemical characterization of herbal extracts with suitable examples.

c) Discuss the principle, various steps involved in HPTLC along with its application in the characterization of herbal extracts.

(2X7.5=15)

CENTRAL UNIVERSITY OF HARYANA

End Semester Examinations March 2023

Programme: M. Pharm. (Pharmacognosy) **Session: 2022-23**

Semester: 1st **Max. Time: 3 Hours**

Course Title: Phytochemistry **Max. Marks: 75**

Course Code: MPG 103T

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End Semester Examinations March 2023

Programme: M. Pharm. (Pharmacognosy) **Session: 2022-23**

Semester: First **Max. Time: 3 Hours**

Course Title: Advanced Pharmacognosy-1 **Max. Marks: 75**

Course Code: MPG 102T

Instructions:

1. Question no. 1 has Seven parts and students are required to attempt any five. Each part carries three Marks.
2. Question no. 2 to 5 have three parts and students are required to attempt any two parts of each question. Each part carries seven and half marks.

1. a) Define the term "*Cultivation*". Discuss various factors affecting the cultivation of medicinal plants.
   b) Discuss the status of Pharmacognosy in the area of research and industry.
   c) What are *Marine Natural Products*? Give five examples alongwith significance.
   d) Define *Nutraceuticals* and *Functional foods*. Give suitable examples.
   e) Give the occurrence, Chemical structure, characteristic feature of *Liminoids*.
   f) What do you understand by the terms "*WHO*" & "*AYUSH*".
   g) Discuss the source, chemical structure and uses of Andrographolide, Tocotrienol and Quercetin. **(5X3=15)**

2. a) Discuss *Current Good Collection Practices* for medicinal plants.
   b) Explain *Current Good Agricultural Practices* employed in Plant drug cultivation.
   c) Discuss *Marine toxins* giving suitable examples and significance. **(2X7.5=15)**

3. a) Give the biological source, main constituents and medicinal uses of the following:
   i) Spirulina ii) Broccoli iii) Flax seeds iv) Black cohosh v) Ginseng
   b) Briefly discuss *FSSAI* guidelines and its importance in the regulation of nutraceuticals.
   c) Write informative note on PUFA, Antioxidants and Herbal teas. **(2X7.5=15)**

4. a) Discuss the occurrence, isolation and characteristic features of following phytopharmaceuticals: i) Xanthophyll ii) Taxol iii) Rutin

b) Discuss the formulation and standardization of nutraceuticals.

c) Write the informative note on the following:

i) β-Carotene ii) Ellagic acid iii) Shatavarins **(2X7.5=15)**

5. a) What do you mean by Pharmacovigilance and how does it operate?

b) Discuss the spontaneous reporting schemes for biodrug adverse reactions?

c) Ellaborate the safety monitoring of herbal medicines. **(2X7.5=15)**

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Term End Examinations March 2023

Programme: M. Pharm. (Pharmacognosy) **Session: 2022-23**

Semester: First **Max. Time: 3 Hours**

Course Title: Modern Pharmaceutical Analytical Techniques **Max. Marks: 75**

Course Code: MPG 101T

Instructions:

1. Question no. 1 has seven parts and students are required to answer any five. Each part carries three marks.
2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven and half marks.

Q 1. (5X3=15)

a) Chemical Shift
b) Choice of solvents and solvent effect in UV-Visible spectroscopy
c) FAB and MALDI analyser
d) Working and theory of electrophoresis
e) Bragg's law and application of X-rays
f) Derivative differential thermal analysis
g) Applications of column chromatography

Q 2. (2X7.5=15)

a) Briefly explain the theory and principle of Fluorescence spectroscopy.
b) Describe Beer–Lambert law with the derivation of the equation.
c) What is Quantum numbers and their role in NMR?

Q3. (2X7.5=15)

a) Describe the theory and principle of NMR with a suitable diagram.
b) Explain different types of ionization in Mass spectroscopy.
c) Briefly explain the instrumentation of Atomic Absorption Spectroscopy with suitable diagram.

Q 4. (2X7.5=15)

a) Discuss in detail about paper electrophoresis with its applications.
b) Briefly explain Gel electrophoresis with suitable diagram.
c) What are X-rays and explain properties, production of X-rays and factors affecting it.

Q 5. (2X7.5=15)

a) Write down theory, principle and working of ion exchange chromatograph.

b) Discuss principle, instrumentation, advantages and pharmaceutical applications of differential thermal analysis.

c) Discuss in detail theory, principle and working high performance liquid chromatography

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Term End Examinations March 2023

Programme: M. Pharm. (Pharmacognosy) **Session: 2022-23**

Semester: First **Max. Time: 3 Hours**

Course Title: Industrial Pharmacognostical Technology **Max. Marks: 75**

Course Code: MPG 104T

Instructions:

1. Question no. 1 has seven parts and students are required to answer any five. Each part carries three Marks.
2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven and half marks.

Q 1. Write short notes on the followings: (5X3=15)

a) Pilot plant scale up techniques.
b) Total quality management (TQM).
c) Comparative monograph study between I.P and U.S.P.
d) Stability testing of herbal drugs.
e) Rights of patents.
f) Project selection of herbal drug industry.
g) Revocation of patents.

Q 2. (2X7.5=15)

a) Explain the concepts of ISO-9000 for herbal drug industry.
b) Elaborate the Export and Import policy of Herbal medicines in India.
c) Discuss an overview of Good manufacturing practices (GMP) for herbal drug industry.

Q 3. (2X7.5=15)

a) Describe general parameters of monographs of herbal drugs given in Ayurvedic Pharmacopoeia.
b) Discuss different parameters for quality assessment of herbal drugs according to WHO guidelines.
c) Compare monographs of any two herbal drugs given in British Herbal Pharmacopoeia and American Herbal Pharmacopoeia.

Q 4. (2X7.5=15)

a) Discuss the methods of stability testing of natural products.
b) Define herbal medicine. Discuss in detail clinical laboratory testing of herbal medicine.
c) Write the current challenges in upgrading and modernization of herbal formulations.

Q 5. (2X7.5=15)

a) Describe in brief the procedure for patent filing in India.

b) Discuss in detail about Indian and international patent law applicable to natural products.

c) Define herbal drug industry. Describe the infrastructure in production of standardized extract of solid dosage forms.

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Term End Examinations March 2023

Programme: M. Pharma. **Session: 2022-23**

Semester: First **Max. Time: 3 Hours**

Course Title: Traditional Medicines **Max. Marks: 70**

Course Code: SIAS PS 03 01 01 E 4004

Instructions:

1. Question no. 1 has seven parts and students are required to answer any four. Each part carries three and half Marks.
2. Question no. 2 to 5 have three parts and students are required to answer any two parts of each question. Each part carries seven marks.

Q 1. (4X3.5=14)

a) Write the characteristics and preservation of Gutika.
b) "Similia Similibus Curentur". Explain the statement.
c) Write the contribution of Dr. Hahnemann in Homeopathy system of Medicine.
d) Write short notes on carrier oil for aromatherapy.
e) Write short notes on contraindication of essential oil.
f) Enlist various equipment recommended for In House Quality Control Section.
g) Write a note on requirement for sterile product.

Q 2. (2X7=14)

a) Define Ayurveda and describe the basic principles of Ayurvedic system of Medicine.
b) Discuss the different dosage forms used in Ayurvedic system of Medicine and write the method of preparation of Arista.
c) Describe the method of preparation, characteristics and storage conditions of Churna.

Q3. (2X7=14)

a) Write a detailed note on the history of the development of homeopathy in India.
b) Explain the principles of Homeopathy system of medicine in detail.
c) Discuss the formulations employed in Homeopathy.

Q 4. (2X7=14)

a) What is aromatherapy? Describe different extraction methods of essential oil.
b) What are essential oils? Give details of any THREE essential oil-producing plants.
c) How does aromatherapy work? Who uses essential oils? What are the application method of Aroma oil?

Q 5. (2X7=14)

a) Outline and discuss in detail about the general requirements of Good Manufacturing Practices.

b) Give various recommended machinery, equipment, and minimum manufacturing premises required for the manufacture of various categories of Ayurveda, Siddha system of medicines.

c) Write different machinery, equipment and minimum manufacturing premises required for the manufacture of various categories of Unani System of Medicines.

CENTRAL UNIVERSITY OF HARYANA

Term End Examinations March 2023

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