

Roll Number ----- (Total Number of Questions 13) (Total number of Printed Pages 01)

Programme	B. Pharmacy
Semester	6 th
Subject	Herbal Drug Technology
Subject Code	BP603T
Paper ID	77988
Time	3Hours
Maximum Marks	75

Instructions to Candidates: No supplementary/continuation sheet will be issued to the candidates. Answer the questions precisely.

*Section A consists of Ten parts of 2 marks each (Objective Type); Attempt **ALL**.

Section B consists of Three questions carrying 10 marks each (Long Answer); attempt any **TWO.

*** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.

Section A

(10 X 2 = 20)

1. Give very short answers to the followings (2 marks each):

i.	Define Herbal drug Preparation.
ii.	Define Aristhas and Asvas.
iii.	What are Phytosomes?
iv.	Define Nutraceuticals.
v.	Write in brief about health benefits of PUFA.
vi.	Write sources and uses of Spirulina.
vii.	Give examples of Hair care products.
viii.	What do you mean by Biopiracy and Bioprospecting?
ix.	What is Schedule Z of Drugs & Cosmetics act for ASU drugs?
x.	Define Patent.

Section B

(2 X 10 = 20)

2.	Discuss the various requirements and procedures in the GMP of herbal drug industry according to Schedule T of Drug and Cosmetic Act.
3.	Write about the market of Nutraceuticals. What is the scope in market growth of nutraceutical in coming future?
4.	Write down the steps involved in Processing of herbal raw material. What precautions are to be taken care of while processing herbal raw material.

Section C

(7 X 5 = 35)

5.	Discuss possible interactions of Pepper with food and drugs and their side effects.
6.	Discuss the case study of Neem.
7.	Discuss the scope and future prospects of herbal drug industry.
8.	What is Traditional knowledge? What is its importance?
9.	Write a brief note on Oral care products.
10.	Discuss the role of nutraceuticals in CVS disease and Cancer.
11.	What are the steps involved in the preparation of Bhasmas? Write down their method of standardisation.
12.	Give the importance and uses of alfa-alfa & Kava-Kava.
13.	Why stability testing of herbal drugs is a challenging issue?

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Section A (10 X 2 = 20)

1. Give very short answers to the followings (2 marks each):

i.	What are Aristas and Asvas?
ii.	Define the term Herbal drug preparation.
iii.	List any four plant-based industries in India.
iv.	Describe storage conditions for accelerated stability testing of herbal drugs.
v.	What are Probiotics? Give examples.
vi.	Enlist various examples of herbal sweeteners.
vii.	Define the term Biopiracy and Bioprospecting.
viii.	Name two herbs used in dental care with their biological source.
ix.	Give the health benefits and role of nutraceuticals in CVS diseases.
x.	What do you mean by evaluation of drugs?

Section B (2 X 10 = 20)

2.	Discuss briefly about various steps involved in the processing of herbal materials.
3.	Briefly explain the components and objectives of Schedule T.
4.	Write a detailed note on patenting of traditional knowledge (TK) and natural products with case studies.

Section C (7 X 5 = 35)

5.	Describe the possible side effects and interactions of Garlic and Ephedra.
6.	Write a short note on binders and diluents used as herbal excipients.
7.	Describe the herbs used in hair care with suitable examples.
8.	Write the scope and future prospects of herbal drug industry.
9.	Write a note on general aspects, market growth and global scenario of nutraceuticals.
10.	Explain the basic principles of Ayurvedha and Siddha.
11.	What are Phytosomes? Give their method of preparation.
12.	Write a note on stability testing of herbal drugs.
13.	Explain the objectives and functions of ASU and DCC.

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Section- A

(10X2=20)

1.	Give very short answers to the followings:
i.	What do you mean by organic farming?
ii.	Give the basic concept of Siddha system of medicine.
iii.	Write the source and use of fenugreek seeds.
iv.	Define herbal medicine and herbal medicinal product.
v.	Give example of any two herbal used as oral hygiene products.
vi.	Write the full form of ICH and DTAB.
vii.	What are herbal excipients? Give examples.
viii.	Define nutraceuticals and health foods.
ix.	Write the meaning of lehya and gutika.
x.	Give examples of nutraceuticals used for gastro intestinal diseases.

Section- B

(2X10=20)

2.	Write a descriptive note on herbal-drug interactions with examples.
3.	Discuss various patenting and regulatory requirements of natural products.
4.	Explain Good Manufacturing Practice (GMP)/ Schedule T requirements for Indian system of medicine.

Section- C

(7X5=35)

5.	Briefly write about stability testing.
6.	Write the role of nutraceuticals in cardiovascular diseases.
7.	Give examples of herbals used as perfumes, colours and antioxidants
8.	Explain the future prospects of herbal drug industry.
9.	How we can prepare and standardize Ayurveda formulation aristas and asawas?
10.	Give the importance of spirulina and honey as health food.
11.	Explain the terms biopiracy and bioprospecting.
12.	Write about the case study of curcuma patenting.
13.	Write a short note on good agricultural practices in cultivation of medicinal plants.

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***Section C consists of nine questions carrying 5 marks each (Short Answer); attempt any **SEVEN**.

Section A

(10 X 2 = 20)

1.	Give very short answers to the following:
i.	Define Herb. Give two examples of herbs used in our kitchen.
ii.	What are the uses of Amla and Ginseng?
iii.	Define Organic Farming.
iv.	Write biological sources and uses of Turmeric.
v.	Suggest some advantages of Herbal drugs.
vi.	What do you mean by Functional Foods? Give suitable examples.
vii.	Define PUFA with its functions.
viii.	Define Biopiracy.
ix.	Write two sources of natural sweeteners.
x.	Define Biodynamic Agriculture.

Section B

(2 X 10 = 20)

2.	Describe the herbal excipients.
3.	Explain the ICH guidelines for stability testing of herbal formulations.
4.	What are Aristas and Asavas? Write their methods of preparation and standardization parameters with example?

Section C

(7 X 5 = 35)

5.	Explore the prospects of the Herbal Drug Industry in India.
6.	Write a note on the Unani System of Medicine.
7.	Write a note on Herb-Drug Interaction.
8.	Write a note on Phytosomes.
9.	Write briefly about the different types of Nutraceuticals available in the market.
10.	Write briefly about the use of plants in skincare?
11.	Discuss the patenting aspect of traditional knowledge.
12.	Describe the schedule T.
13.	Write a note on Bio-pesticides and mention their advantages.

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*** Section C consists of Nine questions carrying 5 marks each (Short Answer); attempt any SEVEN.

Section- A (10 X 2 = 20)

1.	Give a very short answers to the followings:
i.	Define herbal drug preparation.
ii.	Define aristhas and asvas.
iii.	What are phytosomes?
iv.	Define nutraceuticals.
v.	Write in brief about health benefits of polyunsaturated fatty acid (PUFA).
vi.	Write sources and uses of spirulina.
vii.	Give examples of hair care products.
viii.	What do you mean by biopiracy and bioprospecting?
ix.	What is "Schedule-Z" of drugs and cosmetics act for ASU drugs?
x.	Define patent.

Section- B (2 X 10 = 20)

2.	Discuss the various requirements and procedures in the GMP of the herbal drug industry according to "Schedule-T" of the drug and cosmetic act.
3.	Write about the market of nutraceuticals. What is the scope in market growth of nutraceuticals in the coming future?
4.	Write down the steps involved in processing of herbal raw material. What precautions are to be taken care of while processing herbal raw material?

Section- C (7 X 5 = 35)

5.	Explore potential interactions between pepper and food/drugs, along with their respective side effects.
6.	Examine the case study of neem, covering its planetary aspects and traditional knowledge.
7.	Assess the scope and future outlook of the herbal drug industry.
8.	Define traditional knowledge and elucidate its significance.
9.	Provide a brief overview of oral care products.
10.	Investigate the role of nutraceuticals in addressing cardiovascular disease (CVS) and cancer.
11.	Outline the steps involved in preparing bhasmas and detail their standardization process.
12.	Highlight the significance and various uses of alfa-alfa and kava-kava.
13.	Explore the challenges associated with stability testing in herbal drugs.

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****Section- B** consists of **three questions**, each carrying **10 marks** (Long Answer Type); **Attempt any two.**

*****Section- C** consists of **nine questions**, each carrying **5 marks** (Short Answer Type); **Attempt any seven.**

Section- A (10X2=20)

1.	Give very short answers to the followings:
i.	What are the possible side effects and interactions of <i>Ginkgo biloba</i> ?
ii.	Define phytosomes.
iii.	Why is authentication of herbal materials important?
iv.	Comment on Schedule Z of the Drugs & Cosmetics Act.
v.	Write the names of two herbal industries in India, along with two examples of formulations from each industry.
vi.	What are biopesticides? Give two examples.
vii.	Give examples of the following excipients: (a) Natural colorants (b) Natural disintegrating agents
viii.	Write the nutraceutical importance of Amla.
ix.	Define bioprospecting and biopiracy.
x.	Name two institutions involved in research on medicinal and aromatic plants in India.

Section- B (2X10=20)

2.	Write in detail about the basic principles involved in the Ayurvedic system of medicine.
3.	Explain the WHO and ICH guidelines for the assessment of herbal drugs.
4.	Comment on the Good Manufacturing Practice (GMP) of Indian systems of medicine.

Section- C (7X5=35)

5.	Mention the health benefits and role of nutraceuticals in ailments like diabetes and cancer.
6.	Add a note on sources and description of raw materials of herbal origin used in skin care products.
7.	Write a short note on the stability testing of herbal drugs.
8.	Illustrate the present scope and future prospects of the herbal drugs industry.
9.	Outline the preparation and standardization of Asava and Arista.
10.	Add a note on alfalfa and spirulina as health foods.
11.	Write a note on conventional herbal formulations, syrups, and tablets.
12.	What are the patenting aspects of traditional knowledge and natural products?
13.	Summarize the regulations related to ASU drugs in India.

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*** Section -C consists of Nine questions carrying 5 marks each (Short Answer); attempt any SEVEN.

Section- A (10X2=20)

1.	Give very short answers to the followings:
i.	Write the principle involved in Unani system of medicine.
ii.	What are the health benefits of Chicory?
iii.	Write the functions of ASU DCC.
iv.	What are advantages and disadvantages of Conventional dosage forms?
v.	What is Biodynamic agriculture?
vi.	Define Nutraceuticals.
vii.	How <i>Bhasmas</i> are prepared?
viii.	Give names of two plants used as Health food beneficial in diabetes. Give complete biological source of one.
ix.	Name two herbs used in oral hygiene products with their biological source.
x.	Give names of two plant based industries in India.

Section- B (2X10=20)

2.	Discuss the significance of herbs as Excipients. Write a detailed note on Colorants and Sweetners.
3.	'Herbs are not always safe. They do have side effects and interactions.' Elaborate with suitable examples.
4.	Give an overview of WHO guidelines for Assessment of herbal drugs.

Section- C (7X5=35)

5.	Write a note on Good Agricultural Practices in cultivation of medicinal plants.
6.	Discuss briefly the scope and future prospects of Herbal drug industry.
7.	Write a note on patenting aspects of traditional knowledge.
8.	Write an informative note on Schedule Z of Drug and Cosmetic act for ASU drugs.
9.	What are Phytosomes? Give their method of preparation.
10.	Give the importance of Spirulina and Honey as Health food.
11.	Write briefly about the use of herbs for Skin care.
12.	Discuss briefly objectives and components of GMP.
13.	Write a descriptive note on Biopesticides.

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