SS INSTITUTE OF PHARMACY

(A unit of VS Educational & Charitable Trust)
Approved by Tamilnadu Government & Pharmacy Council of India, New Delhi.
Affiliated to the Tamilnadu Dr. M.G.R. Medical University,
and The Directorate of Medical Education, Chennai.

SS INSTITUTE OF PHARMACY, SANKARI
I-SESSIONAL THEORY EXAMINATION
VI SEMESTER

Subject : Herbal Drug Technology
Date : 06/03/24

Duration : 1hr 30 minutes
Total marks : 30

I. LONG ANSWER

1 X 10 = 1

1. Preparation and standardization of ayurvedic formulations of

   i) Arishtas

   ii) Asavas

II. SHORT ANSWER

2 X 5 = 10

1. Explain the herbal interactions of HYPERCIUM
2. Explain the principles of siddha system of medicine

III. VERYSHORT ANSWER

5 X 2 = 10

1. Define organic faming
2. ALFALFA
3. Types of pest
4. Define panchasheel
5. Standardization of marana

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SS INSTITUTE OF PHARMACY, SANKARI
II-SESSIONAL THEORY EXAMINATION
VI SEMESTER

Subject : Herbal Drug Technology
Date : 03/04/24

Duration : 1hr 30 minutes
Total marks : 30

I. LONG ANSWER **1 X 10 = 1**

1. Define Herbal excipients and Classification of herbal excipients

II. SHORT ANSWER **2 X 5 = 10**

1. Define phytosomes & Method of preparation
2. Case study of Neem

III. VERYSHORT ANSWER **5 X 2 = 10**

1. Bio prospecting
2. Plant genetic resources
3. Herbal cosmetics
4. Components of syrup
5. Perfumes

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24/30

INSTITUTE OF PHARMA
SANKAR - 627301

NAM S. Anbu selvi
ROLL NO 5
SUBJECT Herbal drug technology
SEMESTER I

I) 10 mark:

1) Preparation and standardization of ayurvedic formulation of

i) Arishtas

Arishtas are prepared by the process of fermentation for a specific time period after boiling the main decoction substance and adding other ingredients.

Method:

The drug is coarsely powdered to prepare Kasaya

↓

Strained & transferred to the fermentation vessel.

↓

required amount of sugar, jaggery, or honey are dissolved and boiled.

↓

Then added to the mixture obtained after straining the kasaya

↓

An earthen lid is used to cover the mouth of the vessel, and clay-smeared cloth is used to seal the edges.

↓

The jar is uncovered (lid is removed) after a prescribed time and the inspected to determine whether or not complete fermentation has occured.

↓

The fluid in the jar is decanted followed by straining when the fine suspended particles has settled at the bottom.

↓

The liquid obtained after straining is the product which is filtered.

↓

Filtrate is stored in a bottle.

Standardization:

1) By using standardized raw material.

2) By maintaining a definite time period, temperature, light & humidity conditions

Asavas:

The drug is soaked in the form of a decoction in a solution of either sugar or jaggery for a prolonged duration.

↓

The mouth of the vessel is covered with a lid and edges are sealed with clay.

↓

During this time period, fermentation of asava takes place.

↓

Result alcohol is produced which acts as a preservatives.

↓

The product is filtered and the filtrate is stored in a bottle.

Eg:

Kumaryasava
Madhukasava
Vasakasava
Arvindasava.

II 5mark:

1) Hypericum;

Morphology:

St. John's wort (hypericum) is a 50-100 cm tall plant with yellow, star shaped flowers and five petals.

Geographical sources:

It grows in europe, North and south america, australia, New zealand, and eastern asia in sunny.

Uses:

depression & symptoms related to mood like nervousness, tiredness, poor appetite and trouble sleeping.

Possible side effects:

→ Hypericum is safe when taken orally for 12 weeks.

→ It can cause some side effects such as trouble in sleeping, vivid dreams, difficulty in sitting still, nervousness, irritability, tiredness, dry mouth, dizziness, headache, skin rash, and skin tingling.

→ Hypericum is however regarded unsafe when taken orally in large doses as it might cause severe skin reaction to sun exposure.

2) Siddha system of medicine.

→ Siddha medicine system was found by Tamil dravidian culture.

→ It is the oldest medicine system.

→ Utilizes drugs obtained from vegetables.

→ Siddha medicine system deals with human body as well as with inner soul.

Basic principle;

→ The universe is made up of matter and energy (two essential entities).

→ The Siddhas call them Siva (male) and Shakti (female, creation).

→ matter & energy co-exist & cannot be separated.

i) Mann

ii) Neer

iii) Thee

iv) Vayu

v) Akasam.

→ Earth, water, fire, air and ether are the manufacture manifestation of these elements.

→ The human body is made up of different combination of these elements.

Doshas;

→ Vadham

III 2mark:

1) Organic farming.

A unique production management system that promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity, by using on-farm agronomic.

2) Alfalfa:

Family - fabaceae

B.source - medicago sativa

Synonym - Buffalo herb.

Uses:

1) Diuretics
2) Diabetes
3) Osteoarthritis & Rheumatoid arthritis.

3) Pest - Types:

- Fungi & viruses
- Insects
- Weeds
- Non insect pests like birds, rabbit, mites.

4) Panchsheel.

- Rasa
- Guna
- Virya
- Vipaka
- Prabhava.

5) Standardisation of marana:

- Determination of foreign organic mater
- Determination of ash value

INSTITUTE OF PHARMA
SANKAR - 637301
NAM V. Gowsalya
ROLL NO 20
BJECT Herbal Drug Technology
SIONAL 1st sessional Theory

25
30

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Eg:

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matter & energy co-exist & cannot be separated.

Mann, Neer, Thee, Vayu, Aakasam

Earth, water, fire, air and ether.

Tridoshas

III

1) organic farming.

A unique production management system that promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity by using on-farm agronomic

2) Alfalfa.

Family - fabaceae
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Uses

Diuretic
Diabetes
osteoarthritis & Rheumatoid arthritis.

3) Pest: types

Fungi & viruses
Insects
weeds
Non insect pests like birds, Rabbit, mices

4) Panchsheel.

Rasa
Guna
Virya
Vipaka
Prabhava

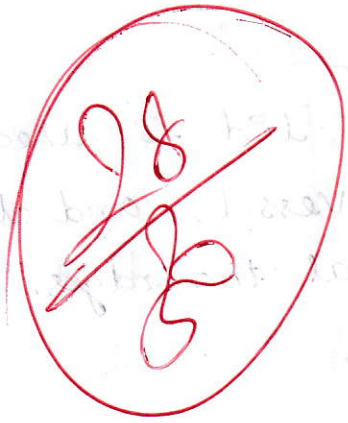
5) standardization of maxana

Determination of foreign organic matter

Determination of ash value

Determination of extractive value

Determination of physical constants.



INSTITUTE OF PHARMA
SANKAR - 637301

NAME M. Swathy
ROLL NO 14
SUBJECT Herbal drug Technology
PROFESSIONAL 01

Q. 10m:

1. Preparation and standardization of ayurvedic formulations of

A) Arishtas.

Arishtas are prepared by the process of fermentation for a specific time period after boiling the main decoction substance and adding other ingredients

Method:

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Then added to the mixture obtained after straining the kasaya.

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Filterate is stored in a bottle

Standardization:

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Result alcohol is produced which acts as a preservatives

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Eg:

Kumaryasava
Madhukasava
Vasakasava
Arvindasava.

II. SM

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i) Munn
ii) Neer
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iv) Vayu
v) Aakasam.

Earth, water, fire, air and ether are the manufacture manifestation of these elements.

The human body is made up of different combination of these elements.

Tridoshas:

Vatham -

Pitham

II 2m

1. Organic farming:

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2. Alfalfa:

Family - fabaceae

B. source - medicago sativa

Synonym - Buffalo herb.

Uses

1. ~~Kidney~~ Diuretic
2. Diabetes.
3. Osteoarthritis & Rheumatoid arthritis.

3. Pest: types:

Fungi & viruses

Insects

Weeds

Non insect pests like birds, Rabbit, mites

4. Panchsheel.

Rasa

Guna

Virya

Vipaka

Prabhava

5. Standardization of marana:

Determination of foreign organic matter.

Determination of ash value.

Determination of extractive value.

Physical Constants.

INSTITUTE OF PHARMA
SANKAR - 627301
NAME M. Swathy
ROLL NO 14
SUBJECT Herbal drug Technology
SESSIONAL 02

(2)

1. 10m

1. Herbal Excipients:

Excipient are inert substances added to a pharmaceutical formulation along side the active pharmaceutical ingredient (API) to aid in the manufacturing process, improve drug delivery, stability or enhances the overall characteristic of the formulation

Herbal excipients are natural substances derived from plant that are used in pharmaceutical formulations for various purposes.

Eg of Natural excipients of Plant origin are starch, agar, alginate, guar gum, xanthan gum, gelatin, pectin, acacia, tragacanth and cellulose,

These are used for various purpose in Pharmaceutical formulations

Significance :

1. colourants:

They give a appearance to the Product

They also help in product identification and brand differentiation.

When derived from herbal sources colourants offer the added benefit of being natural.

Eg: Chlorophyll.

Significance

1. Herbal excipients offer a natural alternative to synthetic dyes and pigments.

2. They may possess medicinal properties of plants.

2. Sweeteners:

Herbal sweetners are substance used to give sweetness to pharmaceutical formulations, particularly oral liquid medications, chewable, tablets and lozenges.

Eg: Stevia, honey.

Significance:

Natural excipients alternative to synthetic sweetners.

They are low-calorie or calorie-free, making them suitable for use in formulation intended for individuals with dietary restriction

3. Binders

Binders are agents used to impart cohesiveness to granules so that tablet remain intact after compression

Eg: Acacia, Gelatin

Sig:

Binders ensures that tablets remain intact and do not break apart during handling, Packaging etc..

Binders help in evenly distributing the API and other excipients throughout the tablet.

4. Diluents

Diluents, also known as fillers, are inert substances added to formulations to increase the bulk of the dosage form.

Eg: Lactose, mannitol, starch

Significance:

1. Diluents increase volume and bulk dosage form ensuring uniformity in size & weight of tablet or capsule.

2. Herbal diluents enhances flow properties of powder, facilitating uniform mixing & distribution of active ingredients and excipients

5. Viscosity binders:

Viscosity binders are a category of excipients used in formulations to adjust the viscosity of the formulation

Eg: Xantham gum, Xanthomonas Campestris

6. Disintegrants:

Disintegrants are the agents added to tablets, capsules and some other formulations aiding in their breakdown into smaller particles when they come into contact with moisture or bodily fluids.

Q. SM

1. Phytosomes:

Phytosomes is a novel drug delivery technology that was introduced in 1989

Phytosomes are like tiny delivery vehicles for plant extracts. They wrap around the plant compounds with a special coating made of phospholipids, which are natural fats found in our bodies. This coating helps the plant compounds get absorbed better in our bodies. Its like giving plant extracts a boost, making them work effectively

Advantage:

1. They increase bioavailability due to Phospholipid complex, thus improves therapeutic effect
2. They are required in lower doses due to high bioavailability

Method of Preparation:

1. Extraction:

The active compounds from the plant material are extracted using suitable solvents like ethanol or water.

2. Isolation of Phospholipids:

Phospholipid are isolated from natural sources like soyabeans & lecithin.

3. Complexation:

The extracted plant compounds are mixed with the isolated phospholipids under controlled conditions such as temperature & pH

4. Filtration & drying:

the phytosome complex

2. Case Study of Neem:

Neem, a tree indigenous has been utilised for centuries in ayurvedic medicine for various purposes including Pest control, Skin ailments & oral hygiene

In 1990s the U.S company W R Grace filed a patent application with the USPTO for a method of controlling fungi in plants using a fungicidal extract derived from neem Seeds

the granting of the neem patent sparked outrange in india & globally. Critics agreed that the patent represented biopiracy, as it sought to claim ownership over traditional knowledge developed & presented by indian communities over generations.

In response to the controversy, the indian government, along with NGOs launched a campaign to challenge the patent's validity.

Evidence was presented to the European patent office (EPO) demonstrating the prior art of neem's traditional used in india, leading to a legal challenge to cancel WR Grace's patent.

In 1995, Epo cancelled WR Grace's patent acknowledging the pre-existing traditional knowledge and uses of neem in india.

2m

1. Bioprospecting:

Bioprospecting is defined as the orderly search and development of new sources of chemical compounds, genes, microorganism, macroorganism and other valuable products from the nature

---

2. Plant genetic Resources (PGR)

PGR refers to diversity of genetic material contained in plant that is actual or cultivated, their wild relatives and other species closely related to them.

---

3. Herbal cosmetics,

It is defined as Beauty product which possess desirable Physiological products such as skin healing, smoothing, enhancement of appearance and conditioning properties with help of herbal ingredients in them.

Eg: Herbal creams
Herbal hair care

---

4. Components of Syrup:

Sugar or sucrose
purified water
medicinal herb
preservatives
colouring agent
Flavouring agent

---

5. Perfumes:

Perfumes are used to enhance the odour of the formulation.

Eg:
Lavender.
Sandalwood.

Perfumes contain natural preservative, thus

24/30

Remark:

Herbal excipients:

→ Excipient are inert substances added to a pharmaceutical formulation along side the active pharmaceutical ingredient (API) to aid in the manufacturing process, improve drug delivery, stability or enhances the overall characteristic of the formulation.

→ Herbal excipients are natural substances derived from plants that are used in pharmaceutical formulations for various purposes.

→ Eg of natural excipients of plant origin are starch, agar, alginate, guar gum, xanthan gum, gelatin, pectin, acacia, tragacanth and cellulose.

→ These are used for various purpose in pharmaceutical formulations.

Significance:

1) Colourants:

→ They give a appearance to the product.

→ They also help in product identification and brand differentiation.

→ When derived from herbal sources colourants offer the added benefit of being natural.

Eg: Chlorophyll.

2) Sweeteners:

Herbal sweeteners are substance used to give sweetness to pharmaceutical formulations, particularly oral liquid medications, chewable, tablets and lozenge.

Eg: Stevia, Honey.

Significance:

Natural excipients alternative to synthetic sweetners.

They are low-calorie or calorie-free, making them suitable for use in formulation intended for individuals with dietary restriction.

3) Binders:

Binders are agents used to impart cohesiveness to granules so that tablet remain intact after compression.

Eg; Acacia, Gelatin.

4) Diluents:

Diluents, also known as fillers, are inert substances added to formulations to increase the bulk of the dosage form.

Eg: Lactose, mannitol, starch.

Significance:

1) Diluents increase volume and bulk dosage form ensuring uniformity in size & weight of tablet or capsule.

2) Herbal diluents enhances flow properties of powder, facilitating uniform mixing & distribution of active ingredients and excipients.

5) Viscosity binders:

Viscosity binders are a category of excipients used in formulations to adjust the viscosity of the formulation.

Eg: Xanthan gum, Xanthomonas campestris.

6) Disintegrants:

Disintegrants are the agents added to tablets, capsules and some other formulations aiding in their breakdown into smaller particles when they come into contact with moisture or bodily fluids.

II 5 marks:

1) Physesomes:

→ Physesomes is a novel drug delivery technology that was introduced in 1989.

→ Physesomes are like tiny delivery vehicles for plant extracts. They wrap around the plant compound with a special coating made of phospholipids, which are natural fats found in our bodies. This coating helps the plant compounds get absorbed better in our bodies. Its like giving plant extracts a boost, making them work effectively.

Advantage:

1) They increase bioavailability due to phospholipid complex, thus improves therapeutic effects.

2) They are required in low doses due to high bioavailability.

Method of preparation:

1) Extraction: The active compounds from the plant material are extracted using suitable solvents like ethanol or water.

2) Isolation of phospholipids: Phospholipid are isolated from natural sources like soyabeans & lecithin.

3) Complexation: The extracted plant compounds are mixed with the isolated phospholipids under controlled conditions such as temperature & PH.

4) Filtration & drying: The phytosome complex are then filtered and dryed.

Case study of Neem:

→ Neem, a tree indigenous to India has been utilised for centuries in ayurvedic medicine for various purposes including ~~plant~~ pest control, skin ailments & oral hygiene.

→ In 1990s the U.S company WR grace filed a patent application with the USPTO for a method of controlling fungi on plants using a fungicidal extract derived from neem seeds.

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III 2mark:

1) Bioprospecting:

Bioprospecting is defined as the orderly search and development of new sources of chemical compounds, genes, micro organisms, macro organisms and other valuable products from the nature.

2) Plant genetic resources (PGR)

PGR refers to diversity of genetic material contained in plant that is actual or cultivated, their wild related and other species closely related to them.

3) Herbal cosmetics:

It is defined as Beauty product which posses desirable physiological products such as skin healing, smoothing enhancement of appearance and conditioning properties with help of herbal ingredients in them.

Eg: Herbal creams.
Herbal hair care.

4) Components of syrup:

- Sugar or sucrose
- Purified water
- Medicinal herb
- Preservatives
- Colouring agent
- Flavouring agent.

5) Perfumes: Perfumes are used to enhance the odour of the formulation.

Eg: Lavender

INSTITUTE OF PHARMA
SANKAR - 627302
NAME V. Gowsalya
ROLL NO 20
SUBJECT Herbal Drug Technology
SESSIONAL 2nd sessional Theory

24/30

I

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Eg: xantham gum.

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The granting of the neem patent & packed outrange in india & globally.

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In 1995, EPO cancelled WR Grace's patent acknowledging the pre-existing traditional knowledge and uses of neem in India.

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Eg:

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Eg:

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