# PHB Education

## Government Exam and D. Pharm Exit Exam Preparation Questions Bank

## *Subject: Pharmacognosy*

## *Chapter -4 : Distribution, Identification tests, pharmaceutical applications, isolation, the therapeutic activity of Crude drugs*

## *Topic: Pharmacognosy – Terpenoids*

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### 1–10: Introduction & Distribution

1. Terpenoids are derived from which basic unit?

   A) Isoprene ($C_5H_8$)

   B) Acetate

   C) Benzene

   D) Pyrrole

   → **Answer: A**

2. The isoprene rule was proposed by:

   A) Ruzicka

   B) Wallach

   C) Robinson

   D) Kekulé

   → **Answer: A**

3. Terpenoids are mainly found in:

   A) Volatile oils

   B) Fixed oils

   C) Sugars

   D) Proteins

   → **Answer: A**

4. Monoterpenes contain how many carbon atoms?

   A) 5

   B) 10

   C) 15

   D) 20

   → **Answer: B**

5. Sesquiterpenes contain how many isoprene units?

   A) 1

   B) 2

   C) 3

   D) 4

   → **Answer: C**

6. Diterpenes are composed of:

   A) 10 carbons

   B) 15 carbons

   C) 20 carbons

   D) 30 carbons

   → **Answer: C**

7. Triterpenes have the molecular formula:

   A) $C_{10}H_{16}$

   B) $C_{15}H_{24}$

   C) $C_{30}H_{48}$

   D) $C_{20}H_{32}$

   → **Answer: C**

8. Phytosterols such as β-sitosterol belong to which group?

   A) Triterpenoids

   B) Diterpenoids

   C) Monoterpenoids

   D) Alkaloids

   → **Answer: A**

9. Which plant part is richest in terpenoids?

   A) Flower and fruit

   B) Leaf and bark

   C) Root only

   D) Stem only

   → **Answer: B**

10. The main source of terpenoids is:

    A) Essential oils of plants

    B) Carbohydrates

    C) Amino acids

    D) Proteins

    → **Answer: A**

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**11–20: Types & Distribution**

11. Camphor is an example of:

    A) Monoterpene ketone

    B) Diterpene

    C) Sesquiterpene

D) Triterpene

→ **Answer: A**

12. Menthol is classified as:

A) Alcoholic monoterpene

B) Ketonic monoterpene

C) Aldehydic monoterpene

D) Ester

→ **Answer: A**

13. Citral is a:

A) Aldehydic monoterpene

B) Alcohol

C) Ketone

D) Acid

→ **Answer: A**

14. Squalene is a:

A) Triterpene hydrocarbon

B) Diterpene alcohol

C) Monoterpene aldehyde

D) Steroid

→ **Answer: A**

15. Abietic acid is a:

A) Diterpenic resin acid

B) Monoterpene

C) Sesquiterpene

D) Alkaloid

→ **Answer: A**

16. Artemisinin (antimalarial) is a:

A) Sesquiterpene lactone

B) Diterpene alcohol

C) Monoterpene

D) Triterpene

→ **Answer: A**

17. Taxol (Paclitaxel) is obtained from:

A) *Taxus brevifolia*

B) *Digitalis purpurea*

C) *Rauwolfia serpentina*

D) *Cinchona officinalis*

→ **Answer: A**

18. Taxol is a:

A) Diterpene

B) Triterpene

C) Monoterpene

D) Alkaloid

→ **Answer: A**

19. Ginkgolides are:

A) Diterpenes from *Ginkgo biloba*

B) Monoterpenes from peppermint

C) Steroids

D) Saponins

→ **Answer: A**

20. Forskolin is obtained from:

A) *Coleus forskohlii*

B) *Mentha piperita*

C) *Cinnamomum camphora*

D) *Glycyrrhiza glabra*

→ **Answer: A**

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**21–30: Identification Tests**

21. Liebermann–Burchard test is used for:

A) Sterols and triterpenes

B) Alkaloids

C) Glycosides

D) Flavonoids

→ **Answer: A**

22. In Liebermann–Burchard test, a green color indicates:

A) Presence of triterpenoids

B) Absence of terpenes

C) Presence of sugars

D) Presence of alkaloids

→ **Answer: A**

23. Salkowski test detects:

A) Terpenoids

B) Alkaloids

C) Proteins

D) Carbohydrates

→ **Answer: A**

24. In Salkowski test, red coloration in chloroform layer indicates:

A) Terpenoids

B) Tannins

C) Proteins

D) Alkaloids

→ **Answer: A**

25. Noller test is a confirmatory test for:

A) Sterols and triterpenoids

B) Flavonoids

C) Glycosides

D) Proteins

→ **Answer: A**

26. Which reagent is used in Liebermann–Burchard test?

A) Acetic anhydride + Conc. $H_2SO_4$

B) HCl + $FeCl_3$

C) Iodine + KI

D) Molisch reagent

→ **Answer: A**

27. Identification of terpenoids can also be done by:

A) Thin Layer Chromatography (TLC)

B) Paper chromatography only

C) Gravimetric method

D) None

→ **Answer: A**

28. Terpenoids show characteristic absorption in:

A) UV and IR spectroscopy

B) NMR only

C) Mass spectrometry only

D) pH meter

→ **Answer: A**

29. Detection of terpenes in volatile oils can be done by:

A) Gas Chromatography (GC)

B) Paper chromatography

C) Colorimetry only

D) Conductometry

→ **Answer: A**

30. Optical rotation measurement helps identify:

A) Optically active terpenes

B) Sugars

C) Alkaloids

D) Proteins

→ **Answer: A**

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**31–40: Isolation and Extraction**

31. Terpenoids are mostly extracted from:

A) Essential oils

B) Sugars

C) Alkaloid salts

D) Mineral oils

→ **Answer: A**

32. Volatile terpenes are extracted by:

A) Steam distillation

B) Soxhlet extraction

C) Alcoholic maceration

D) Expression only

→ **Answer: A**

33. Non-volatile terpenes (resins, triterpenes) are extracted by:

A) Organic solvents like alcohol or ether

B) Water

C) Steam only

D) Acids

→ **Answer: A**

34. Fractional distillation is used for:

A) Separation of volatile terpenes

B) Purification of sugars

C) Steroid synthesis

D) Alkaloid isolation

→ **Answer: A**

35. Isolation of terpenes often employs:

A) Solvent extraction followed by chromatography

B) Precipitation with lead acetate

C) Evaporation

D) Decantation only

→ **Answer: A**

36. Chromatographic separation of terpenoids uses:

A) Silica gel or alumina

B) Charcoal powder

C) Glass wool

D) Sodium chloride

→ **Answer: A**

37. Identification of components in essential oils is done by:

A) GC–MS (Gas Chromatography–Mass Spectrometry)

B) TLC alone

C) UV only

D) Refractive index

→ **Answer: A**

38. Isolation of Taxol from *Taxus* species uses:

A) Organic solvent extraction

B) Steam distillation

C) Expression

D) Maceration with water

→ **Answer: A**

39. Crystallization is used for:

A) Purification of terpenoids after isolation

B) Separation of sugars

C) Drying process

D) Identification only

→ **Answer: A**

40. Terpenoids are mostly soluble in:

A) Organic solvents like ether and chloroform

B) Water

C) Alkalis

D) Acids

→ **Answer: A**

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**41–50: Pharmaceutical & Therapeutic Uses**

41. Menthol acts as a:

A) Cooling agent and local analgesic

B) Antipyretic

C) Cardiotonic

D) Diuretic

→ **Answer: A**

42. Camphor is used as:

A) Counter-irritant and rubefacient

B) Antacid

C) Anticoagulant

D) Sedative

→ **Answer: A**

43. Citral is used in:

A) Perfumes and vitamin A synthesis

B) Laxative formulations

C) Antitussive drugs

D) Diuretics

→ **Answer: A**

44. Abietic acid is used in:

A) Preparation of varnish and resin

B) Perfumes

C) Antihypertensive agents

D) Antibiotics

→ **Answer: A**

45. Artemisinin is used as:

A) Antimalarial

B) Anticancer

C) Antiseptic

D) Analgesic

→ **Answer: A**

46. Taxol is a potent:

A) Anticancer agent

B) Antimalarial

C) Antipyretic

D) Antihistamine

→ **Answer: A**

47. Forskolin is used as:

A) Antihypertensive and bronchodilator

B) Analgesic

C) Laxative

D) Sedative

→ **Answer: A**

48. Ginkgolides show:

A) Antioxidant and neuroprotective properties

B) Anthelmintic action

C) Cardiotonic effect

D) Diuretic effect

→ **Answer: A**

49. Squalene is used in:

A) Cholesterol biosynthesis and cosmetics

B) Antibiotic production

C) Antipyretics

D) Analgesics

→ **Answer: A**

50. Overall, terpenoids are important due to their:

A) Broad pharmacological activity and commercial value

B) Limited availability

C) Toxicity only

D) Inert nature

→ **Answer: A**

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