

DATE :- 03.12.2024

Total No. of printed pages = 4

BP 504 T

2024

B.Pharm. 5th Semester End-Term Examination

PHARMACOGNOSY AND PHYTOCHEMISTRY — II

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following (Multiple Choice Questions) : 1 × 20
(CO1, CO2, CO3)
- (i) Which drug is not under the chemical class of Indole?
- (a) Quinine (b) Quinidine
(c) Atropine (d) Camthothecin
- (ii) Which is the example of Pseudoalkaloid?
- (a) Caffeine (b) Hygrine
(c) Arecoline (d) Lobeline
- (iii) Deadly Nightshade is the synonym of the drug
- (a) Datura (b) Belladonna
(c) Ephedra (d) Cinchona
- (iv) Which is not the biological source of Cinchona?
- (a) *Cinchona calisaya* (b) *Cinchona officinalis*
(c) *Cinchona succirubra* (d) *Cinchona indica*
- (v) Papaverine shows pharmacological activity
- (a) Spasmolytic (b) Emetic
(c) Antitussive (d) Antiemetic
- (vi) Precursor for the biosynthesis of tropane alkaloids is
- (a) Ornithine (b) Tyrosine
(c) Leucine (d) Lysine

[Turn over

- (vii) Mevalonic acid pathway is also known as
- (a) HMG CoA reductase pathway
 - (b) Acetate-mevalonate pathway
 - (c) Isoprenoid pathway
 - (d) All of the above
- (viii) Flavanoids are biosynthetically derived from
- (a) Shikimic acid pathway
 - (b) Acetate pathway
 - (c) Mevalonic acid pathway
 - (d) None of the above
- (ix) Which spectroscopic technique is valuable for analyzing the functional groups and chemical bonds present in phytoconstituents, providing information about their molecular structure?
- (a) UV-Vis spectroscopy
 - (b) NMR spectroscopy
 - (c) Mass spectroscopy
 - (d) Infrared (IR) spectroscopy
- (x) In a ^1H -NMR spectrum, the number of distinct peaks in the spectrum
- (a) The number of protons in the molecule
 - (b) The molecular weight of the compound
 - (c) The number of electrons in the molecule
 - (d) The number of carbon atoms in the molecule
- (xi) When quantifying compounds using HPTLC, what is the significance of the "peak area" in chromatographic analysis?
- (a) It indicates the relative concentration of the compound in the sample
 - (b) It represents the retention time of the compound
 - (c) It is used to calculate the R_f value
 - (d) It measures the volatility of the compound
- (xii) Guggul is a _____ type of resin.
- (a) Oleo resin
 - (b) Oleo gum resin
 - (c) Glycoresin
 - (d) None of the above
- (xiii) The principle of HPTLC is
- (a) Diffusion Chromatography
 - (b) Electrical mobility of ionic species
 - (c) Adsorption Chromatography
 - (d) None of the above
- (xiv) Digitoxin is a hydrolysis product of
- (a) Purpurea glycoside A
 - (b) Purpurea glycoside B
 - (c) Both (a) and (b)
 - (d) None of the above

- (xv) The antigastric effect of liquorice is because of
- (a) Glycyrrhizin (b) Liquiritin
(c) Isoliquiritin (d) Both (b) and (c)
- (xvi) Eugenol is absent in
- (a) *Eugenia Caryophyllus* (b) *Cinnamomum zeylanicum*
(c) *Cinnamomum cassia* (d) All of the above
- (xvii) Caffeine is chemically
- (a) 1, 3, 7-Trimethylpurine-2, 6-dione
(b) 1, 3-Dimethyl-7H-purine-2, 6 dione
(c) 3, 7-dimethyl-1H-purine-2, 6-dione
(d) None of the above
- (xviii) In which of the following drug Abietic acid is found
- (a) Colophony (b) Taxus
(c) Podophyllotoxin (d) Myrrh
- (xix) Alcoholic solution of volatile substance is called as
- (a) Tincture (b) Spirit
(c) Infusion (d) None
- (xx) Taxol is clinically used as
- (a) Purgative (b) Cardiotonic
(c) Anti-malarial (d) Anti-cancer

2. Short answers. (Answer seven)

7 × 5

- (a) Explain industrial production and estimation of Citral. (CO1, 3)
Explain in detail about Microwave assisted extraction
- (b) "Sesquiterpene hydrocarbons are the principal constituents of Ginger".
Explain the statement with suitable examples. Enlist the uses of ginger. (CO1)
- (c) With the help of a labeled diagram describe the working of the Clevenger apparatus. (CO1)
- (d) Describe the method of isolation of Quinine. (CO3)
- (e) Give the Pharmacognosy of Opium in detail. Give the identification tests for Benzoin and Myrrh. (CO2)

- (f) Explain the biological source, morphology, microscopy, chemical constituents, uses and substitutes of Digitalis. (CO2)
- (g) Describe the method of isolation of Artemisinin. (CO3)
- (h) Describe methods for identification and analysis of caffeine in isolated samples taking into account the various spectral analysis parameters. (CO2, 3)
- (i) Explain the biological source, morphology, chemical constituents and therapeutic uses of vinca. (CO1)

3. Long answers. (Answer any *two*) 2 × 10

- (a) Define metabolic pathways. Classify the different types of metabolic pathways and describe in detail the Shikimic acid pathway. 3 + 3 + 4
(CO1)
- (b) Define Terpenoides. Describe in detail the biological source, isolation, identification and analysis of Menthol. 2 + 8
(CO1)
- (c) Compare and contrast supercritical fluid extraction (SFE) with traditional solvent extraction methods. Describe the critical parameters that affect the selectivity and yield in SFE. Discuss the instrumentation and setup required for performing SFE. 4 + 3 + 3
(CO-3)