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BINA CHOWDHURY CENTRAL LIBRARY
(GIMT & GIPS)
Azara, Hatkhowapara,
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BP 504 T

Roll No. of candidate

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2019

B.Pharm. 5th Semester End-Term Examination

PHARMACOGNOSY AND PHYTOCHEMISTRY – II

(New Regulation)

(W.e.f. 2017-2018)

Full Marks – 75

Time – Three hours

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

PART-A: (MCQ Objective questions): (20 × 1 = 20)

1. (i) Which of the following enzyme is highly involved in Shikimic acid pathway?
(a) Hydrolase (b) Amylase
(c) Synthase (d) Decarboxylase
- (ii) Which of the following is true for Primary Metabolites?
(a) They are involved in normal growth, development and reproduction.
(b) They are NOT involved in normal growth, development and reproduction.
(c) They are not involve in metabolic pathways of secondary metabolites production
(d) None of the above

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- (iii) _____ is the end product of Shikimic acid pathway
- (a) Phosphoenol pyruvate
 - (b) Erythrose-4-Phosphate
 - (c) Chorismate
 - (d) Coumarins
- (iv) Which of the following Co-Enzyme type is involve in Mevalonate pathway
- (a) Co-enzyme A
 - (b) Co-enzyme B
 - (c) Co-enzyme C
 - (d) Co-enzyme D
- (v) Which of the following are the end products of Mevalonate pathway?
- (a) Erythrose-4-Phosphate and Erythrose-5-Phosphate
 - (b) Phosphoenol-pyruvate and Erythrose-5-Phosphate
 - (c) Isopentenyl pyrophosphate and Phosphoenol-pyruvate
 - (d) Isopentenyl pyrophosphate and dimethylallyl pyrophosphate
- (vi) Which of the following is a radio active substance?
- (a) ^{14}C
 - (b) ^{12}C
 - (c) ^{23}Na
 - (d) ^{40}K

- (vii) Which of the following critical limitation is commonly encountered in Tracer techniques?
- (a) Radiation effect
 - (b) Long half life
 - (c) Non-hazardous
 - (d) None of the above
- (viii) Which of the following is an example of pseudo-alkaloid?
- (a) Atropine
 - (b) Vincristine
 - (c) Caffeine
 - (d) Morphine
- (ix) Which of the following is chemically true for Flavonoids?
- (a) Flavonoids shows a $C_6-C_4-C_6$ carbon skeleton arrangement
 - (b) Yellow colour intensity of flavonoids increases with substitution of more numbers of hydroxyl groups
 - (c) Flavonoids is a non-glycosidal substance
 - (d) Flavonoids always bears a nitrogen atom in its structure
- (x) Which of the following heterocyclic ring is present in Steroid moiety?
- (a) Anthracene ring
 - (b) Phenanthrene ring
 - (c) Quino line ring
 - (d) None of the above

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- (xi) Which of the following plant is classified under Cardiac glycoside
- (a) Digitalis
 - (b) Opium
 - (c) Ruta
 - (d) Fennel
- (xii) Which of the following is the Botanical name of 'Senna'?
- (a) Pterocarpus marsupium
 - (b) Glycyrrhiza glabra
 - (c) Foeniculum vulgare
 - (d) Cassia angustifolia
- (xiii) Which of the following chemical test is used to identify 'Caffeine'
- (a) Vitali-Morin test
 - (b) Murexide test
 - (c) Gambier-Fluorescin Test
 - (d) Keller-Keliani test
- (xiv) Quinine is isolated from which of the following plant?
- (a) Cinchona bark
 - (b) Cinnamon bark
 - (c) Kurchi bark
 - (d) Rawolfia bark
- (xv) Terpenoidal/volatile compounds give positive test with?
- (a) FeCl_3
 - (b) Sudan Red-III
 - (c) 80% H_2SO_4
 - (d) None of above

(xvi) Functional group identification of Phytoconstituents can be analyzed by which of the following instrument?

- (a) Scanning Electron Microscope
- (b) Mass Spectroscopy (MS)
- (c) Nuclear Magnetic Resonance (NMR)
- (d) Fourier Transform Infra Red spectroscopy (FT-IR)

(xvii) What is the industrial and medicinal utilization of 'Taxol, vincristine and vinblastine'?

- (a) Antirheumatoid agent
- (b) Antibiotic agent
- (c) Anticancer agent
- (d) Antidepressant agent

(xviii) Which of the following drug is used for industrial production of 'Diosgenin'?

- (a) Dioscorea
- (b) Digitalis
- (c) Senna
- (d) None of above

(xix) Give the full abbreviated form of HPTLC

- (a) High purification Thin Layer chromatography
- (b) High performance Thin Layer Chromatography
- (c) High performance thick layer Chromatography
- (d) None of above

(xx) Which of the following is a Modern method of extracting phytoconstituents from plant?

- (a) Maceration technique
- (b) Soxhlet technique
- (c) Infusion technique
- (d) Microwave-assisted extraction technique

PART B : Answer the following (any seven)

(7 × 5 = 35)

2. Describe in brief the detail systematic pharmacognosy of any one of the following: (5)

- (a) Rauwolfia
- (b) Aloes

3. Match the following. (5)

Group A		Group B	
1	Deadly nightshade	a.	Digitalis
2	Kattha or Cutch	b.	Belladonna
3	Periwinkle	c.	Catechu
4	Mulethi	d.	Liquorice
5	Foxglove	e.	Vinca

4. Give in short the morphological and microscopical diagnostic characters of the following crude drugs. (5)

- (a) Vinca
- (b) Liquorice
- (c) Fennel
- (d) Ginger
- (e) Senna

5. Distinguish between the following:
(2.5 + 2.5)
- (a) Black catechu and Pale catechu
 - (b) Sumatra Benzoin and Siam Benzoin
6. Enumerate the different modern techniques for the extraction of phytochemical constituents and write in short the applications of NMR, FT-IR, Mass spectroscopy and UV-Visible spectroscopy in the analysis of plant active phytoconstituents. (2+3)
7. Describe in detail the procedure for the isolation, purification and identification of Caffeine. (5)
8. Describe in general the industrial production and utilization of any one of the following. (5)
- (a) Artemisinin
 - (b) Taxol
9. Write a short note on any one of the following: (5)
- (a) Tracer techniques
 - (b) Basics and applications of phytochemistry
 - (c) Cultivation and collection of Opium

PART C : Answer the following (any two)

(2 × 10 = 20)

10. Define metabolic pathways. Classify the different types of metabolic pathways and describe in detail the Shikimic acid pathway. (1+2+7=10)

11. Describe in detail the biological source, industrial production, estimation and utilization of any one of the following. (10)

(a) Atropine

(b) Sennoside

12. Define 'terpenoids'. Describe in detail the biological source, isolation, identification and analysis of Menthol. (1+1+4+1+3)
