

DEC 27 2018

KATHMANDU UNIVERSITY
End-Semester Examination [C]
December, 2018

Marks scored:

Level : B. Pharm.
Year : II

Course : PHAR 214
Semester: II

Exam Roll No.:

Time: 30 mins.

F.M. : 20

Registration No.:

Date :

SECTION "A"

[20 Q. × 1 = 20 marks]

Tick (✓) the most appropriate answer.

- Choose a medicinal plant belonging to Leguminosae family
 - Cassia sesnna*
 - Vanilla panifolia*
 - Digitalis purpurea*
 - Rauwolfia serpentina*
- The most common pathway for the biosynthesis of fatty acids in plants is
 - Pentose Phosphate
 - Acetate
 - Shikimate
 - Glycolysis
- Anti-hypertensive herbal metabolite is most commonly obtained from
 - Rauwolfia* species
 - Cinchona* species
 - Catharanthus* species
 - Catharanthus* species
- Indole type of alkaloids are found only in the
 - Claviceps* & *Rauwolfia*
 - Coffee and *Pilocarpus*
 - Cinchona* and *Berberis*
 - Rauwolfia* and *Belladonna*
- Stratified cork cells followed by phelloderm is an anatomical key character of
 - Colchicum* corm
 - Ephedra* stem
 - Hyoscyamus* leaf
 - Rauwolfia* root
- Find the major anthraquinone glycoside from rhizome of plant
 - Rhein
 - Glucovanillin
 - Acacatechin
 - Acylfilicinic acid
- Strong laxative species of *Cassia*, those used in both acute or chronic constipation are
 - Cassia acutifolia* and *Cassia angustifolia*
 - Cassia abovata* and *Cassia auriculata*
 - Cassia acutifolia* and *Cassia auriculata*
 - Cassia angustifolia* and *Cassia abovata*
- Find the medicinal plant which favors the temperate physiographic zone
 - Acacia*
 - Rauwolfia*
 - Cordycep*
 - Taxus*
- Hydrolytic product of 'Purpurea Glycoside C'
 - Gitaliginin & Glucose
 - Gitoxigenin & Glucose
 - Digitoxigenin & Rhamanose
 - Gitoxin & Digitoxose
- Rich source of Steroidal Glycoalkaloid is
 - Urginea maritima*
 - Dioscorea delitoidea*
 - Smilax ornate*
 - Solanum khasianum*

11. Effect of *Chrysanthemum cinerariifolium*, as natural pesticide caused by
 - i. Anti-feedant effect to insect
 - ii. Repellant effect to insect
 - iii. Sodium/Potassium ion channels disrupting effect in insect nerve
 - iv. Stimulant effect on insect heart
12. Find a correct statement on *Fusarium* metabolites
 - i. Fumonisin B1 & B2 inhibits bile juice biosynthesis
 - ii. Trichothecenes are also used as bio fertilizers
 - iii. Trichothecenes are most dangerous among the all Mycotoxins
 - iv. Zearalenone cause morphological disorders of eyes
13. The U.S. Food and Drug Administration approved cannabis-based drug Epidiolex (cannabidiol) oral solution in 2018 for the treatment of
 - i. Psychoactive patients older than two years of age
 - ii. Cancer patients as pain releasing supplements
 - iii. Seizures associated patients of Lennox-Gastaut syndrome and Dravet syndrome
 - iv. Epilepsy patients younger than two years of age
14. Pure natural products acting upon tubulin, prevent from forming into microtubules, and stop the cellular division of lymphoid leukemia

i. Vincristine and Vinblastine.	ii. Vindesine and Vinorelbine
iii. Etoposide and Teniposide	iv. Teniposide and Taxol
15. Choose a group of solvent which are immiscible

i. Methanol and Chloroform	ii. Acetone and Hexane
iii. Toluene and Water	iv. Methanol and Pentane
16. Choose an appropriate biosynthetic mechanism of metabolites
 - i. Shikimic acid has major role in the formation of aromatic amino acids, and fatty acids
 - ii. Combinations of the shikimate pathway and the acetate pathway are responsible for the biosynthesis of Flavanoids
 - iii. Only the Mevalonate pathway is responsible for biosynthesis of Alkaloids
 - iv. Monoterpene units are identified as the diphosphate esters DMAPP and Pyruvic acid
17. Find a compound of male fern in which Keto group is not attached directly in the aromatic ring, but present in side chain.

i. Filicinic acid	ii. Acylfilicinic acid
iii. Filicic acid	iv. Aspidinol
18. Choose a colouring reagent for the plant secondary metabolite "alkaloids"

i. Dragendorff's reagent	ii. Mandalin's reagent
iii. Wagners reagent	iv. Mayers reagent
19. *Quillaja saponaria* saponins are also used to

i. Treat rheumatic arthritis	ii. Treat peptic ulcer
iii. Synthesis of solasonine	iv. Prepare β -sitosterol
20. Choose a correct statement on Ipecac, a herbal medicine
 - i. Emetic in small dose expectorant in high dose
 - ii. Emetine has more emetic action than Cephaeline
 - iii. Emetine hydrochloride is sued as antiprotozoal
 - iv. Minor alkaloids psychotrine and emetamine are Indole type

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F.M. : 55

SECTION "B"
[5Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions:

1. Give the biological source and pharmacological uses of Withania.
2. Write down the cultivation of Liquorice.
3. Give the reason that 'Fagopyrum can be considered as an excellent dietary supplement'.
4. Draw the distinguishing microscopic features of Cinchona bark.
5. Write chemistry and uses of Vinca.
6. Give some chemical properties of Alkaloids.
7. Outline the biosynthetic formation of building block (amino acids) for alkaloids.

SECTION "C"
[5Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. Classify the plant Glycosides in detail.
9. Give the detail profile of opium Alkaloids.
10. Compare and contrast the histological characters of following herbs
a) Digitalis b) Belladonna
11. Describe the pharmacognostical characters of Podophyllum.
12. Briefly explain the natural pesticides from plant sources.
13. Describe the toxins obtained from hallucinogenic fungi Amanita.
14. Write down the working principle of following tools and their application in pharmacognosy
a. Column Chromatography b. Thin Layer Chromatography

SECTION "D"
[2Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. Classify the plant alkaloids according to chemical structure with suitable example.
16. Explain any two laxative herbs from leaf sources.
17. Explain some methods to evaluate the bioactivity of isolated plant metabolites up to mechanism of action with objective to new drug development.

