

KATHMANDU UNIVERSITY
End Semester Examination
June/July, 2023

Marks Scored:

Level : B.Pharm.

Year : II

Exam Roll No. :

Time: 30 mins.

Course : PHAR 204

Semester : I

F. M. : 20

Registration No.:

Date 04 JUL 2023

SECTION "A"

[15 Q. × 1 = 15 marks]

Encircle the correct option of the following multiple choice questions.

- Which one is **NOT** secondary metabolite?
a. Alkaloid b. Flavonoid c. Glycosides d. Glucose
- Gum is the useful part of:
a. Acacia b. Pupa c. Pyrethrum d. Colophony
- Select the odd plant on the basis of pharmacological action (carminative property)
a. Dill b. Clove c. Fennel d. Vinca
- Which one is **NOT** the underground stem?
a. Tuber b. bulb c. Corm d. Stolon
- In the chemical synthesis of aspirin, the precursor (starting molecule) is:
a. Phenol b. Benzene c. Cresol d. Toluene
- Which of the following statement is **WRONG**?
a. Peppermint can be harvested by hay cutters/scissors.
b. Flowers, seeds and small fruits are harvested by seed stripper.
c. Drugs which constitute all aerial parts are harvested by binders.
d. The underground crude drugs are harvested by secateur.
- The most commonly used method for extracting fixed oil from plants are
a. Soxhlet, Clavengers b. Hydrolic press, Solvent system
c. Maceration, Distillation d. Scarification, Supercritical fluid
- Which one is a **CORRECT** statement about microscopic character of given crude drug?
a. Clove bud has schizolysigenous cavities –single rows
b. Fennel fruit has several elongated cells showing aerenchymatous endocarp
c. Eucalyptus leaf has sunken anomocytic stomata
d. Basil leaves do not have any palisade layer
- Choose the suitable combination of medicinal plants based on their family
a. *Cinnamomum zeylanicum*, *Curcuma longa*
b. *Coriandrum sativum*, *Ferula asafetida*
c. *Eucalyptus globulus*, *Cannabis sativa*
d. *Zingiber officinale*, *Syzygium aromaticum*

10. Which of the following plant possesses a significant medicinal impact on the spleen and liver?
 a. Peru balsam b. Colophony c. Castor d. Fennel
11. In the transverse section of plant part, which of the following plant/s leaf contains the 3-4 layers of palisade cells in both regions?
 a. Basil b. Both Eucalyptus and Basil
 c. Mentha d. Eucalyptus
12. Select a group of essential oils in which Eugenol compound is present
 a. Clove oil, Basil oil, Cinnamon oil
 b. Clove oil, Mentha oil, Basil oil
 c. Clove oil, Camphor oil, Eucalyptus oil
 d. Clove oil, Orange oil, Coriander oil
13. Find a natural pesticide whose roots, seeds, and leaves are poisonous to rats and other small animals and also against aphids.
 a. *Ricinus communis* b. *Nicotiana tabacum*
 c. *Gliricidia sepium* d. *Allium savitum*
14. Substantial increment of anthraquinone production by cell suspension culture of *Morinda citrifolia* was obtained in the presence of
 a. IAA b. Indole 3-butyric acid
 c. 2-Naphthoxy acetic acid d. NAA
15. Select a group of herbal originated drugs only related to alkaloid class
 a. Atropine, Nicotine, Caffeine b. Reserpin, Quinine, Digoxin
 c. Morphin, Pinine, Terpene d. Caffeine , Glycyrrhizin, Camphor

Match the best answer related to pharmacological properties of active compounds among the following [5 Q. × 1 = 5 marks]

16.

Quinine
 Menthol
 Hirudin
 Gallic acid
 Camphor

Carminative
 Anticoagulant
 Against oxidative damage
 Antitussive
 Malaria

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SECTION "B"
[5Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions.

1. Briefly explain the chemical composition of cannabis leaf.
2. Classify the resin with suitable example of each class.
3. Explain some herbal insecticides to control the pests of medicinal plants.
4. Write down the biological source and medicinal properties of capsicum fruits.
5. Outline the applications of gibberellins and auxins in the cultivation of medicinal plants.
6. Which type of classification is associated with Solanaceae, Berberidaceae, and Rutaceae. Illustrate with example.
7. Define alkaloid, glycoside, and volatile oil with two examples for each. (Structure not required).

SECTION "C"
[5Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. Explain the general method of extraction of essential oils.
9. Compare the chemistry of coconut oil and cod liver oil.
10. Explain the analytical methods of fix oils emphasizing their quality.
11. Write down microscopic character of fennel fruit with well labeled diagram.
12. Identify any two medicinal plants related to Zingiberaceae family. Compare their chemical composition and medicinal uses.
13. Mention five advantages of the cultivation of medicinal plants.
14. Write about the natural and semi-synthetic drugs.

SECTION "D"
[2Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. Prove this statement that, "the plant tissue culture is a perpetual source for the production of industrially important phytopharmaceuticals materials".
16. Write down the detailed pharmacognostical properties of *Syzygium aromaticum*.
17. Explain the principle and method of preparation of homeopathic medicines, illustrating the potency and strength.