KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Marks Scored:

Level : B. Pharm.
Year : II

Course : PHAR 204
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

Registration No.:

Date 03 MAR 2019

SECTION "A"
[15Q. × 1 =15 marks]

Tick (√) the most appropriate answer.

1. Choose a specific medicinal plant which should be immediately forwarded to artificial drying process after harvesting to avoid hydrolytic degradation of its metabolites.
   a. Clove b. Lemongrass c. Datura d. Digitalis

2. Transverse and longitudinal sections of rhizomes are studied to understand the microscopic characters of
   a. Stone cells, Starch and Vessels
   b. Trichomes, Stomata and Mesophyll
   c. Palisade cells, Vascular bundles and Fibers
   d. Oil glands, Stomata and Calcium oxalate crystals

3. Development of pharmacognosy during 15th century mainly known for
   a. Publishing 'Ortus Sanitatis', and more animal and vegetable kingdoms.
   b. Development of minerals and clinical description of syphilis
   c. Establishing various methods of extraction and pain reliving materials
   d. Development in biological classification with monocot and dicot

4. Numerous vascular bundles which are scattered in the ground tissue is key anatomical character of
   a. Dicot stem b. Dicot root c. Monocot stem d. Monocot root

5. Over-ground of medicinal plants have heavily reticulated leaf venation and distinct fleshy leaf respectively in
   a. Digitalis and Aloe b. Lemongrass and Corcus
   c. Cinnamon and Sisal d. Ricinus and Mentha

6. Select a group of organized type of rhizome drug having essential oil
   a. Rauwolfia, Dioscorea b. Camphor, Pinus
   c. Clove oil, Mentha oil d. Calamus, Ginger

7. Find a group of free living cynobacteria as a biofertilizer which fix the nitrogen to soil
   a. Anabaena, Nostoc and Spirulina
   b. Azospirillum, Phosphobacteria, and Azolla
   c. Agrobacterium, Nitrobacterium and Nostoc
   d. Azospirillum Anabaena, and Azolla

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8. Choose a group of drugs which belong to plant alkaloid class of secondary metabolite
   a. Quinine and Digoxin
   b. Gallic acid and Morphine
   c. Nicotine and Morphine
   d. Heparin and Atropine

9. Physiochemical parameters of WHO Guidelines for Quality Standardized Herbal drugs covers
   a. Ash value, Extractive value, Moisture content
   b. Essential oil yield, Swelling Index value, Ash value
   c. Pesticide residue, Heavy metal content, Moisture content
   d. Foreign matter, Astringent property, Extractive value

10. Which test is suitable for detection of plant Flavanoids
   a. Mayer's reagent and $FeCl_3$ solution
   b. Sodium picrate slution and Alkaline reagent test
   c. Conc. H_2SO_4 and Potassium dichromate solution
   d. Shinoda and Alkaline reagent test

11. Select a group of laxative herbs under the Glycoside class
   a. Rhubarb and Digitalis
   b. Aloe and Senna
   c. Ipecac, Quassia
   d. Stramonium, Colophony

12. Find an animal source of crude drug which is beneficial in bronchial asthma, nerve pain, rheumatism.
   a. Leech hirudin b. Red ant's eggs c. Cobra venom d. Peacock fat

13. Total composition of both Linoleic and Linolenic acids is found highest in
   a. Castor oil b. Sesame oil c. Olive oil d. Linseed oil

14. Acacia gum composed only of four chemical constituents, namely
   a. Peroxidase enzyme, Polyarabinan,, Galactose and Geddic acid
   b. Agarbose, Agaropectin, Rhamanose and Gallic acid
   c. Arabinose, Galactose, Rhamnose and Glucuronic acid
   d. Hemicellulose, Galactose, Arabinose and Aldobionic acid

15. A drug related to Leguminosae but enriched in carbohydrate is
   a. Tamarind b. Tragacanth c. Tolu balsam d. Eucalyptus

SECTION "B"

[5Q. × 1 =5 marks]

16. Compare the most correct answer

A. Atropa	( ) Asthma
B. Rauwolfia	( ) Carminative
C. Agar	( ) Blood pressure
D. Benzoin	( ) Laxative
E. Mentha	( ) Eye pupil dilation

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SECTION "C"

[5Q. × 3 = 15 marks]

Attempt *ANY FIVE* questions.

1. Highlight the emerging scientific innovation in Pharmacognosy.
2. Explain the sample collection techniques for the herbarium preparation.
3. Write down the storage condition of herbal raw materials as per WHO guideline.
4. Describe the application benefits of Auxin on cultivation of medicinal plants.
5. Mention some drugs obtained from marine sources.
6. Give the comparative outline of medicinal use of tamarind pulp and gum acacia.
7. Sketch out the morphology of starch obtained from different plants and mention their sizes.

SECTION "D"

[5Q. × 5 = 25 marks]

Attempt *ANY FIVE* questions.

8. Describe the medicinally important secondary metabolites from essential oil bearing plants.
9. Compare the significant microscopic characters to distinguish herbal materials from monocot and dicot plants.
10. Write down the application of plant tissue culture to obtain high quality herbal raw materials.
11. Explain the cultivation technique and processing of lemongrass.
12. Compare the chemistry and uses of sesame oil and olive oil.
13. Write down the processing method of agar and its application in pharmaceutical sectors.
14. Give the pharmacognostical detail of tolu balsam.

SECTION "E"

[2Q. × 7.5 = 15 marks]

Attempt *ANY TWO* questions.

15. DESCRIBE the application of 'tools and techniques of pharmacognosy' in the promotion of Nepalese herbal sector.

16. Write down the microscopic method of detection of herbal materials used in quality control.

17. Explain the health benefits and chemical composition of non-volatile type of plant fats.