



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN MEDICAL
LABORATORY SCIENCE
HML 405: PHARMACOGNOSY

3RD TRIMESTER 2021/2022

TIME: 2 HOURS

INSTRUCTIONS:

SECTION A:

Answer all questions (4 marks each)

1. Explain the mode of toxicity of glycosides
2. Differentiate between pharmacology and pharmacognosy
3. List FOUR factors that impact on the distribution of secondary metabolites in plant species
4. Explain how you can be obtained a flavonoids rich fraction extract in the laboratory
5. Explain how aqueous extraction of plant materials in pharmacognosy can be carried out

SECTION B: Answer one question in this section

6. Describe the general structure and properties of flavonoids
7. The fungi are good potential source of novel therapeutic compounds. Discuss

SECTION C: Answer all these questions in the answer booklet

1. Pellagra may be treated by administration of;
 - A. Vitamin niacin
 - B. Vitamin B₁₂
 - C. Vitamin D
 - D. Vitamin B₆
2. The most lethal group of phytochemicals are;
 - A. Cardiac glycosides
 - B. Flavonoids
 - C. Alkaloids
 - D. Saponins

3. The best way to identify the compounds extracted with non-polar solvents is by using:
 - A. Calorimetry method
 - B. Liquid chromatography–mass spectrometry
 - C. Gas chromatography–mass spectrometry
 - D. Thin layer chromatography
4. Antibiotics cannot be obtained from the following sources;
 - A. Flora
 - B. Microbes
 - C. Fungal
 - D. Medicinal spa
5. Diet rich in beta carotene or retinol may be used as remedy for the following except;
 - A. Infertility
 - B. Reduced immunity
 - C. Poor vision
 - D. Alopecia
6. The following plants are thought to be good sources of antimalarial drugs:
 - A. Cinchona tree
 - B. Ajugaremba
 - C. Willow
 - D. *Artemisia annua*
7. Death of the following individuals was associated with toxicity of fava beans;
 - A. Socrates
 - B. Pythagoras
 - C. Galileo
 - D. All the above
8. The antioxidant activity may not be associated with;
 - A. Alkaloids
 - B. Protection against tumors
 - C. Improved prognosis of diseases
 - D. Polyphenols
9. One of the following secondary metabolites has adverse effects on red blood cells;
 - A. Glycosides
 - B. Saponins
 - C. Terpenoids
 - D. Flavonoids

10. Charged, polar compounds can be extracted using;
- A. Water only
 - B. Methanol
 - C. Petroleum ether
 - D. Dichloromethane
11. The best method for determination of the activity of crude plant extract is to use;
- A. Humans
 - B. In vitro assays
 - C. In vivo assay in small animals like dogs
 - D. Administration into laboratory rodents
12. Which of the following extraction method would net higher yield of phytochemicals?
- A. Soaking for 24 hours prior to decanting
 - B. Soaking for 72 hours prior to decanting
 - C. Repeated soaking and decanting for 72 hours
 - D. Soaking for up to 2 hours prior to decanting
13. Concerning processing of plant materials for phytochemical analysis;
- A. They should be exposed to direct sunlight
 - B. Should be dried in shade away from direct sunlight
 - C. UV radiation has no effect
 - D. Should be boiled first to fix the specimen
14. Which of the following is not a feature of alkaloids?
- A. Bitter
 - B. Neutralizes acids
 - C. Have Sulphur in their structure as key element
 - D. Contain nitrogen in their rings
15. One of the following is not a characteristic of alkaloids;
- A. Acid
 - B. A base
 - C. Amphoteric
 - D. Neutral
16. Test for flavonoids includes;
- A. Mayers reagent
 - B. Shimoda's test
 - C. Foam formation
 - D. Dragendorff reagent

17. Which of the following medicinal effect is not associated with alkaloids activity?

- A. Analgesia
- B. Antimicrobial
- C. Antitumor
- D. All the above

18. Which of the following statement is not true concerning the phytochemical distribution? It is affected by the;

- A. Climate
- B. Soils
- C. Time of harvest
- D. None of the above

19. Analgesics from plant sources does not includes;

- A. Cannabinoids
- B. Opioids
- C. Diclofenac
- D. Salicylates

20. Which of the following is not a mechanism of analgesic activity of naturally occurring alkaloids?

- A. Cholinergic receptors stimulation
- B. opioids receptors stimulation
- C. Cannabinoids receptors
- D. H₂ receptors of histamine