



KENYATTA UNIVERSITY
EXAMINATION FOR THE DEGREE OF BACHELOR OF PHARMACY
PPD 310: PHARMACOGNOSY I

3RD SEMESTER 2021/2022

TIME: 3 HOURS

INSTRUCTIONS:

- i. This paper consists of two sections; A, B and C.
- ii. Answer all questions.
- iii. Answer sections A, B, C and D in separate booklets.

SECTION A: PHARMACEUTICAL BOTANY

1. Citing relevant examples, describe the scope of pharmacognostic studies. (5 marks)
2. Regarding medicinal plants classification in pharmaceutical botany;
 - (a). Use four characteristics to analyze the artificial classification model as relates to identification of medicinal plants. (4 marks)
 - (b). Explain the ideal classification model, giving proper characteristics of diagnostic value (4 marks)
3. Regarding voucher specimens;
 - (a). Give the definition (1 mark)
 - (b). Explain their value (1 mark)
 - (c). Describe how you would prepare it, highlighting the information needed on its label (8 marks)
4. Identify the biological sources for the following commercialized crude drugs; (5 marks)
 - (a). Senna
 - (b). Rhubarb
 - (c). Digitalis

- (d). Cascara
 - (e). Rauwolfia
5. Describe three features of diagnostic value which are used to identify plants of pharmaceutical interest in the following phyla; (12marks)
- (a). Bryophyta
 - (b). Pterydophyta
 - (c). Gymnospermae
 - (d). Angiospermae

SECTION B: COMMERCE AND PRODUCTION OF MEDICINAL PLANTS

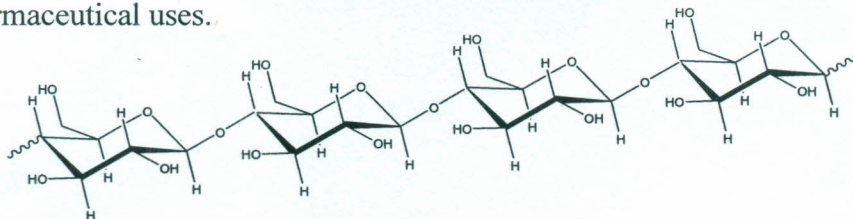
1. Discuss the challenges associated with cultivation of medicinal plants. (7 marks)
2. Describe four measures that can be taken to guarantee the botanical identity of cultivated medicinal plants (4 marks)
3. Giving appropriate examples, describe the best practices in the commercial collection of the following parts of medicinal plants
 - a. Gums and resins (3 marks)
 - b. Rhizomes (3 marks)
 - c. Leaves (3 marks)
4. Discuss the impact of local and international laws and policy on the trade in medicinal plants and their products (10marks)
5. List three endangered medicinal plants commercialized in Kenya. For each state the geographical distribution and one medicinal use (6 marks)
6. Compare and contrast freeze drying and microwave drying techniques of herbal materials (4 marks)

SECTION C: CARBOHYDRATES

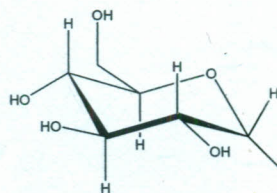
1. Identify two carbohydrates of pharmaceutical value derived from red algae and two from bacteria. (2 marks)
2. Explain two sources of dextrans for clinical use. (2 marks)
3. Draw the structure of the following disaccharides.
 - (a). (+)- Sucrose (3 marks)
 - (b). (+)-Lactose (3 marks)

4. Describe the differences between pharmaceutical gums and mucilages. (4 marks)
5. Explain why honey reduces Fehling's solution. (4 marks)
6. Using a flow diagram, explain the methods used to isolate alginates from brown sea weeds. (6 marks)
7. For the following polysaccharides, give the name, one natural source and two pharmaceutical uses. (16 marks)

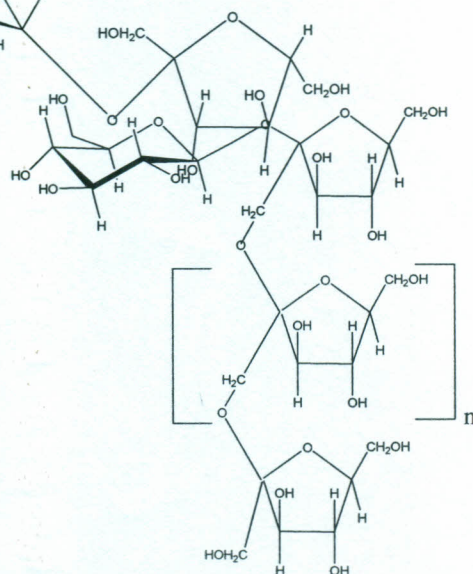
a.



b.



c.



d.

