

UNIVERSITY OF FORT HARE

BOT 323

DEGREE EXAMINATIONS

NOVEMBER 2018

TIME: 1½ HOURS

MARKS: 50

SUBJECT: BOTANY 323

PAPER: PLANT SYSTEMATICS

This paper consists of two pages including the cover page

Internal Examiners

Prof CN Cupido
Ms Z Mhinana

External Examiner

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INSTRUCTIONS

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER
QUESTION FOR A TOTAL OF TWO (2) QUESTIONS

QUESTION 1

a) Contrast the following and give examples where possible:

- i. actinomorphic and zygomorphic flower
- ii. phenetics and phylogenetics
- iii. adnation and connation
- iv. homology and homoplasy
- v. parallel and indented key

(10)

b) Give the meaning of the following author citations:

- i) *Ficinia acuminata* (Nees)Nees
- ii) *Gnidia polycephala* (C.A.Mey.)Gilg ex Engl
- iii) *Phymaspermum parvifolium* (DC.)Benth. & Hook. ex B.D.Jacks

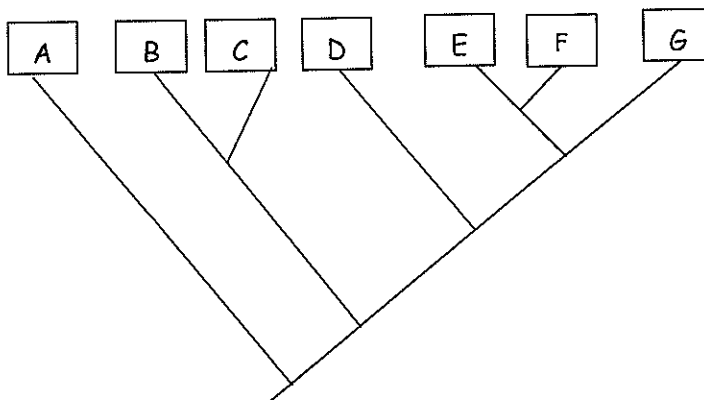
(5)

c) What are following specimens called:

- i) Three specimens cited by the author of a new species with a holotype (1)
- ii) No holotype is designated in the original description of a species. A later author changes the name and select a type from the original material (1)

d) Give an example of an artificial classification system and give reasons why you consider it to be artificial. (3)

e) Examine the following figure and answer the questions:



- i) Why do we say that the group B and C and the group E+F+G are monophyletic?(2)
- ii) Can polyphyletic groups contain monophyletic groups within them? Yes or No (1)
- Explain your answer.....(2)

[25]

QUESTION 2

Discuss the species problem by exploring the mechanistic and historical concepts, highlight the problems, if any, in applying them in practice. Offer a solution to the species problem

[25]

QUESTION 3

a) Discuss pollen as source of taxonomic information. Give one example where it was applied in classification

(15)

b) Define a taxonomic character and briefly discuss the kinds of characters used in classification.

(10)

[25]

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