



THE OPEN UNIVERSITY OF SRI LANKA
B.Sc. / B.Ed. DEGREE PROGRAMME
LEVEL 04 – 2012/2013
BOU 2102 / BOE 4103 SYSTEMATICS OF HIGHER PLANTS AND ANIMALS
NO BOOK TEST

DURATION – ONE (01) HOUR

Reg. No.

Date: 28th March 2013

Time: 4.00- 5.00 p.m.

Answer all Questions using space provided in the question paper.

01. a) What are the two factors that contribute to the variations of the phenotype of organisms?

- i
- ii

b) What are the important things you should consider with regards to these variations in exercises in Plant Systematics?

.....

c) What are the major mechanisms of preventing fertilization in the process of reproductive isolation?

.....

d) List the three major definitions put forwarded on species concept.

- i
- ii
- iii

02. a) Give two advantages and two disadvantages of using morphological features as source of taxonomic evidences.

Advantages

i.....

 ii.....

Disadvantages

i.....
.....

ii.....
.....

03. a). Give four (04) persons or resources to which one should give proper credit in writing taxonomic papers

i.....

ii.....

iii.....

iv.....

b) List the logical steps involved in Numerical Taxonomy

i.....

ii.....

iii.....

iv.....

v.....

04. a) List three assumptions about the evolution that we make in Cladistic analysis

i.....

ii.....

iii.....

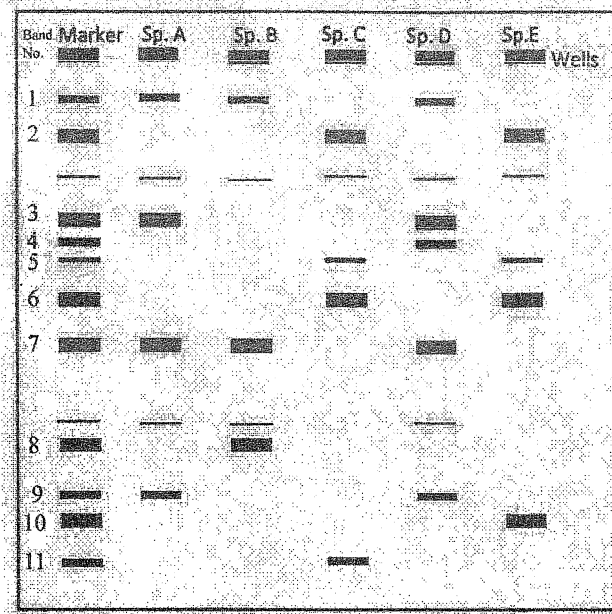
b) Give two naturally occurring events that might give rise to distorted Cladograms

i.....
.....

ii.....
.....

05. Seed proteins of five different species were extracted and the extracted samples were analyzed using Poly Acrylamide Gel Electrophoresis. The Gel developed from the study is given below.

Lane 1 – Marker (use this lane to identify different bands)
 Lane 2 – Sp. A, Lane 3 – Sp. B, Lane 4 – Sp. C, Lane 5 – Sp. D,
 Lane 6 – Sp. E

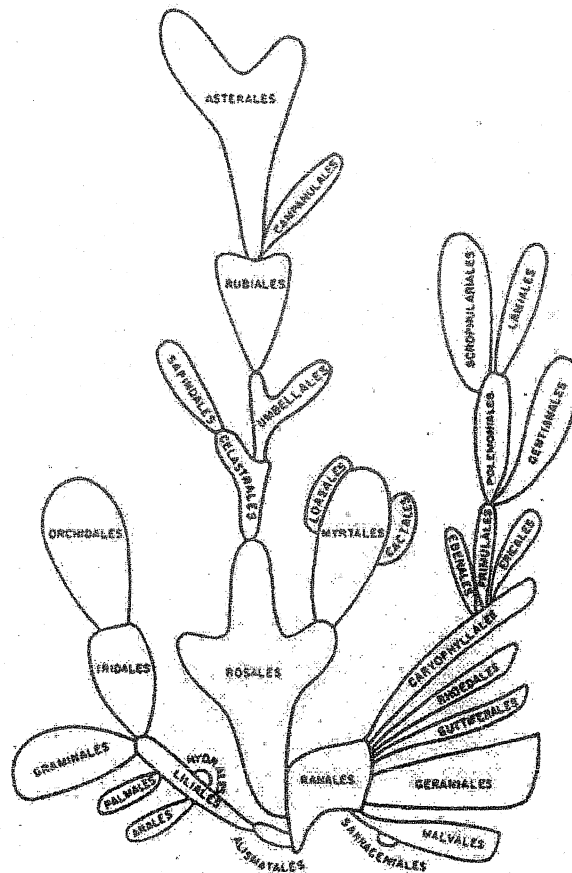


i. Using the banding pattern in the gel, develop a dichotomous key to classify the 5 species.

ii The researcher has identified that out of the five species, 2 species belong to Family Apocynaceae and the other 3 are of Family Rubiaceae.

Carefully examine the gel picture and identify the species belong to Family Apocynaceae.

06. Examine the following Bubble diagram (Bessyan Cactus) which constructed based on the number of members belongs to the orders in Plant Kingdom. Answer the following questions.



i) When considering the Orders ROSALES and RUBIALES, which is the most advanced?

ii) State the Order which includes the highest number of members in the branches derived from the Order ALISMATALES?

iii) Name the Order which possess evolutionary most advanced characters?

iv) State the Order which possibly gives rise to the Order MYRTEALES?

v) State whether the Order IRIDALES belongs to the Monocotyledons or Dicotyledons?

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