

THE OPEN UNIVERSITY OF SRI LANKA
B.Sc./ B.Ed. DEGREE PROGRAMME- 2014/2015
LEVEL 04 – BOU 2102/ BOE 4102
SYSTEMATICS OF HIGHER PLANTS AND ANIMALS
OPEN BOOK TEST
DURATION - ONE (01) HOUR



Reg. No:.....

Date : 8th Feb. 2015

Time: 2.30- 3.30 pm

Answer all Questions in PART A within the given space.

PART A (Botany) (30 Minutes)

(01) Underline the correct answer

a. Systematics deals with

- a) Identification of Organism
- b) Classification of organisms
- c) the kinds and diversity of all organisms and the existing relationships amongst themselves
- d) identification, naming and classification of both plants and animals

b. Which statement is incorrect ?

- a. Systematics is a dynamic subject
- b. Taxonomy is only a part of systematics
- c. Biosystematics gives the same meaning of Taxonomy
- d. Systematics is a subject with a never ending synthesis

c. The advantage of Systematics is that it

- a) gives an idea of organic diversity, its origin and evolution in the plant and animal kingdom
- b) is complementary to other branches of biology
- c) provides correct information needed in agriculture, medical, veterinary sciences etc.
- d) All of these

d. A group of organisms at any particular level in a classification system is called a

- a. Species
- b. Genus
- c. Taxon
- d. phylum

e. In the early 1700's, the classification system used was

- a. trinomial
- b. polynomial
- c. binomial
- d. pentanomial

f. Linnaeus is credited with introducing

- a) The concept of inheritance
- b) Law of limiting factor
- c) Theory of heredity
- d) Binomial nomenclature

g. What is the correct descending sequence of taxonomic categories?

- a. Class- order- division family- species
- b. Division-class -order- family- genus
- c. Genus-class- division- family- order
- d. Family-order-genus-division-class

h. Natural system of classification of plants differs from artificial system of classification in

- a) taking into account only one vegetative character
- b) taking into account only one floral character
- c) taking into account all the similarities between plants
- d) all of these

i. A system of classification based on morphologically important all characters is termed as

- a. Artificial system
- b. Natural system
- c. Mechanical system
- d. Phylogenetic system

j. Out of the 4 widely known systems of classification, one remains less phylogenetic and more natural and that is of

- a) Engler and Prantl
- b) Hutchinson
- c) Bentham and Hooker
- d) Dahlgren

02. Match each of the following with the appropriate taxonomic rank.

- a. Class
- b. Division
- c. Family
- d. Genus
- e. Kingdom
- f. Order
- g. Species

- rank of the Polygonaceae
- rank of the Rosales
- rank of the Pinophyta
- rank of the Magnoliopsida
- rank that is most universally applicable and important taxonomic identification

03. The names given below have all been published for the same plant (taxon) in the genus *Hydrophyllum*.

- Hydrophyllum capitatum* (Greene) Douglas 1895
- Hydrophyllum occidentale* Rydberg 1910
- Hydrophyllum fendleri* (Gray) Heller 1927
- Phacelia fendleri* Gray 1882
- Phacelia capitata* Greene 1883

1. What is the correct name for this plant if it is in the genus *Hydrophyllum*?
.....
2. Which name(s) is (are) a taxonomic (heterotypic) synonym for the valid name?
.....
3. Which name(s) is (are) a nomenclatural (homotypic) synonym for the valid name
.....

04. The following names have all been published for a single species of prairie grass (Poaceae):

- Agrostis clandestina* Biehler 1807
- Sporobolus clandestinus* (Biehler) Hitchc. 1908
- Sporobolus canovirens* Nash 1901
- Sporobolus cryptandrus* (Torr.) Gray 1848
- Vilfa heterolepis* Michx 1835
- Vilfa cryptandra* Torr. 1824

1. How many different specimens have been studied to name this taxon?
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2. How many different authors/botanists have named this taxon?
.....
3. What is the correct name for this plant if we determine that it belongs in the genus *Sporobolus*?
.....
4. Which name, if any, of the other names published for this taxon, is a heterotypic synonym to the correct name (if more than one answer, just list one, if none are heterotypic synonyms write 'none')?
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5. Which name, if any, of the other names published for this taxon, is a homotypic synonym of the correct name name (if more than one answer, just list one; if none are homotypic synonyms write 'none')?
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