

UNIVERSITY OF RUHUNA
BACHELOR OF SCIENCE (GENERAL DEGREE) LEVEL I (SEMESTER I) EXAMINATION
July 2016

SUBJECT: BOTANY

Time: 2 hrs

COURSE UNIT: BOT1112 (Plant Diversity, Unity and Evolution)

Answer four questions including question no.1

1.

(a) Name three domains in the classification system.

(i)

(ii)

(iii)

(b) Give five characteristics features of Prokarya.

(i)

(ii)

(iii)

(iv)

(v)

(c) Name three characteristics features of Archaea.

(i)

(ii)

(iii)

(d) Name the evolutionary oldest photosynthetic group of organisms?

.....

(e) What are the differences between heterocyst and akinete?

.....
.....

(f) Name three major vegetative forms of blue green bacteria and provide an example for each.

- (i)
- (ii)
- (iii)

(g) Provide three ecological importance of blue green bacteria.

- (i)
- (ii)
- (iii)

(h) Why do you not include virus into three domains or five kingdoms?

.....
.....
.....

(I) What are the major characteristics of virus?

.....
.....
.....
.....

(j) What are the major characteristics of fungi?

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.....
.....
.....

(k) 'Kingdom fungi divides into two main divisions', name the two divisions.

(i)

(ii)

(l) What are the five subdivisions of kingdom fungi? Provide an example for each.

(i)

(ii)

(iii)

(iv)

(v)

(m) What do you understand by the group "fungi sterilia"? Give an example.

.....
.....

(n) Name three economic importance of fungi.

(i)

(ii)

(iii)

2.

i) Write down the correct answers in the table given below.

Character	Chlorophyta	Phaeophyta	Rhodophyta	Basillariophyta
Habitat				
photosynthetic pigments				
storage food				

Cell wall components				
Absent (x) or present (√) of motile forms in reproduction				

ii) Using labeled diagrams illustrate the different types of chloroplast in chlorophyta. Give an example for each.

3.

- i) What are the general characters of Bryophytes?
- ii) Compare the gametophytes of thallose liverworts with those of leafy liverworts.
- iii) Illustrate the life cycle of *Pogonatum* using **only** labeled diagrams.

4.

- i) Give an example (generic name) for each of the following:
 - a) An epiphytic fern with dimorphic leaves.
 - b) An aquatic fern with sporocarps
 - c) A fern grown in mangrove ecosystems.
 - d) A fern grown well in open habitats

e) A live vascular plant with unicellular rhizoids.

f) A heterosporous Lycopod plant

ii) Give three general characters of Order Ophioglossales.

iii) How does Phylum Sphenophyta differ from other Phyla of Pteridophytes. (Give three special features)

iv) Name three different types of steles found in Pteridophyta giving labelled diagrams.

5.

a) Name four divisions of extant (i.e. not-extinct) gymnosperms and give two representative species for each division **(22 marks)**

b) List six unique features of Gymnosperms. **(18 marks)**

c) Using labeled line diagrams compare the morphological and anatomical characters of leaflet of *Cycas* and needle leaf of *Pinus*. **(60 marks)**
