



Index No.:

**RAJARATA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES**

**B.Sc. (General) Degree in Applied Sciences
First Year Semester I Examination – June/ July 2018**

BIO 1201 – PLANT DIVERSITY I

Time: Two (02) hours

Answer FOUR (04) questions including the compulsory question.

Compulsory question: [Approximate time allocation is **half (1/2) an hour**].

1. Answer **ALL** questions. Underline the **most suitable option** using a pen. **No marks will be given for multiple responses.** (100 marks)

- a) Members of Charophyta
- are microscopic.
 - are considered as the link between ancestral aquatic and terrestrial plants.
 - contain Floridian starch as stored food.
 - are strictly aquatic.
- b) The six kingdom classification of living organisms was put forward by
- Robert Whittaker.
 - Ernst Haeckel.
 - Carolus Linnaeus.
 - Carl Woes.
- c) A student examining a fresh water sample observed three organisms with following features: the first is a unicell divided into two half cells and the second is an unbranched filament with cap cells and the third is a star like coenobium. These three organisms could be
- Pinnularia* sp., *Spirogyra* sp. and *Volvox* sp.
 - Closterium* sp., *Oedogonium* sp. and *Scenedesmus* sp.
 - Cosmarium* sp., *Zygnema* sp and *Pediastrum* sp.
 - Closterium* sp, *Oedogonium* sp. and *Pediastrum* sp. respectively.

- d) Which of the following statements are correct?
- A. Fungi are eukaryotes.
 - B. Water molds are true fungi.
 - C. Yeast is an ascomycete fungus.
 - D. Slime molds belong to Kingdom Protista
- i. A, B, C and D
 - ii. A, C and D
 - iii. A, B and D
 - iv. B, C and D
- e) *Pythium* is a “fungi like” organism
- i. having uninucleate hyphae.
 - ii. that causes damping off in seedlings.
 - iii. which is an obligate parasite.
 - iv. capable of producing conidia.
- f) Which of the following are correct regarding cyanobacteria?
- A. They can be found in hot water springs.
 - B. They produce endospores and exospores.
 - C. Cells are coenocytic.
 - D. Some bear pseudo vacuoles.
 - E. Photosynthetic lamellae are present in their cells.
- i. A, C and D
 - ii. A, B and C
 - iii. A, B, D and E
 - iv. A, B and D
- g) Select the correct statement.
- i. All cyanobacteria produce toxins.
 - ii. A colony of *Microcystis* sp. is rectangular / square.
 - iii. *Anabaena* spp. form symbiotic association with *Pinus* sp.
 - iv. *Scytonema* sp. shows false branching.
- h) Examples for a colony, unbranched undifferentiated filament and a filament with true branching respectively are
- i. *Chlorococcum* sp., *Oscillatoria* sp. and *Stigonema* sp.
 - ii. *Chlorella* sp., *Lyngbya* sp. and *Tolypothrix* sp.
 - iii. *Gleocapsa* sp., *Lyngbya* sp. and *Tolypothrix* sp.
 - iv. *Merismopedia* sp., *Oscillatoria* sp and *Stigonema* sp.
- j) Brown algae
- i. are found only in fresh water.
 - ii. always display isomorphic alternation of generations.
 - iii. occupy both tropical and temperate habitats.
 - iv. contain starch as stored food.

- 3
- k) A lichen is a symbiotic association between a
- fungus and an algae/cyanobacterium.
 - fungus and a plant.
 - cyanobacterium and a bryophyte.
 - cyanobacterium and a coralloid root of *Cycas* sp.
- l) Which of the following bear/ bears heterocysts?
- A. *Lyngbya* sp. B. *Nostoc* sp. C. *Stigonema* sp.
D. *Rivularia* sp. E. *Spirulina* sp.
- A, B, C and E
 - Only D
 - B, C and D
 - All of above
- m) Select the correct statement /s.
- A. Glomeromycotan fungi form mycorrhizae with plants.
B. Ascomycetes fungi produce ascospores and conidia.
C. Basidiocarps are produced by Zygomycota fungi.
D. Many Chytridiomycetes are aquatic.
E. Some Basidiomycetes are edible.
- A, B, C and D
 - B, C, D and E
 - A, B, D and E
 - All of above
- n) Which of the followings is **not correct**?
- Sexual reproduction is absent in *Aspergillus* sp.
 - Some Zygomycetes cause diseases in man.
 - Extensive heterokaryotic stage is prominent in Ascomycetes fungi.
 - Basidiomycota fungi are commonly known as "cup fungi".
- o) Select the correct statements.
- A. Some ascomycetes fungi are used in industries.
B. All fungi produce mycotoxins.
C. Members in the genus *Phytophthora* are known as plant destroyers.
D. Fungi are natural decomposers of organic matter.
- A, C and D
 - A and D
 - A, B and D
 - All of above
- p) Which of the following algae are commonly found in Sri Lanka?
- A. *Sargassum* spp. B. *Halimeda* spp. C. *Laminaria* spp.
D. *Gracillaria* spp. E. *Ulva* spp.
- A, B, D and E
 - B, C, D and E
 - A, B, and E
 - All of above

4

Optional questions: [Approximate time allocation is **half (½) an hour each**. Answer only **THREE (03)** questions].

2. a) Describe briefly, citing examples, any **two (02)** different types of life cycles that occur among members in Division Chlorophyta. (60 marks)
b) State **five (05)** economic/ecological importance of algae. (20 marks)
c) Illustrate the habit of any **three (03)** algae commonly found in Sri Lanka. (20 marks)
3. Illustrate, using appropriate examples, the vegetative diversity found among the members in Order Nostocales. (100 marks)
4. Differentiate between the following pairs.
a) A filament of *Rivularia* sp. and that of *Lyngbya* sp. (40 marks)
b) Thallus of *Ulva* sp. and that of *Sargassum* sp. (30 marks)
c) Sporangiospore and conidium. (30 marks)
5. "Fungi, friend or foe of man"? Discuss, using appropriate examples. (100 marks)

-- END --