



UNIVERSITY OF EMBU

2017/2018 ACADEMIC YEAR

SECOND SEMESTER EXAMINATIONS

**THIRD YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE,
BACHELOR OF SCIENCE (BIOLOGY) AND BACHELOR OF SCIENCE
(ENVIRONMENTAL CONSERVATION AND NATURAL RESOURCES
MANAGEMENT)**

SBT 101: PLANT DIVERSITY

DATE: APRIL 10, 2018

TIME: 2:00 -4:00 PM

INSTRUCTIONS: Answer ALL Questions from SECTIONS A and B, and ONE Question in Section C.

SECTION A: Multiple Choice Questions (1 Mark each)

Please tick in the box opposite the correct answer.

1. Which of the following is not an example of unicellular form of algae?
 - Chlamydomonas
 - Euglena
 - Volvox sp.
 - Rhizochrysis
2. Which of the following is not a characteristic of chlamydomonas?
 - Occurs in fresh water ponds
 - Has a pair of whip-like flagella
 - Its cell is prokaryotic
 - Has a single cup shaped chloroplast which contains pyrenoids
3. The following statements explain the distribution of blue green algae. Which statement is wrong?
 - occur in fresh marine waters such as in open oceans where they are the main photosynthetic organisms
 - They form algal blooms in lakes and ponds
 - A few species are sub-aerial and inhabit dry surfaces.
 - Some occur in soils (paddy fields) where they fix atmospheric nitrogen.

4. *Oedogonium* is filamentous green algae. Which of the following is not true about its characteristics?

- Each cell contains a large netlike chloroplasts that forms a tube
- There are pyrenoids at a number of intersections of the net
- Its strictly epiphytic i.e aquatic flowering plants and other algae provide surfaces for its attachment
- The terminal cell of each filament is flat while the remaining cells are rectangular

5. What is a stipe in brown algae?

- The stalk that joins holdfast to the leaflike blades
- Is a tough structure resembling a mass of intertwined roots
- Enable the blades to float
- A type of food reserve

6. What are lichens?

- Combination of two organisms which live intimately in a symbiotic relationship
- Clusters of cells that live in a colony
- Combination of two organisms which live as a parasite and a host
- Multicellular organisms living in a colony

7. Members of bryophyta do not contain vascular bundles but some mosses have water conducting cells called;

- Hydroids
- Leptoids
- Rhizoids
- Xylem

8. Which of the following is not a moss?

- Polytrichum commune*
- Funaria*
- Sphagnum*
- Marchantia sp.*

9. The following are divisions of pteridophytes that are recognized. Which one is not?

- Psilophyta (whisk ferns)
- Lycophyta (ground pines, spike mosses and quillworts)
- sporophyta
- Polypodiophyta (Ferns)

10. The following are ways in which asexual reproduction in spike mosses occur, which one is not?
- Fragmentation
 - Tubers
 - Bulbils
 - Rhizomes
11. Which of the following is not a type of asexual reproduction in blue – green algae?
- Fragmentation
 - Cell division
 - Hormogone
 - Conjugation
12. How do antheridia of charophyta differ from that of chlorophyta?
- It is multicellular
 - It is unicellular
 - Formed by the process of mitosis
 - It is non-motile
13. The following are examples of yellow-green algae, which one is not?
- Vaucheria,
 - Stipitococcus,
 - Dinobryon
 - Polysiphonia
14. Which of the following statements is correct about equisetophyta
- The leaves are separate at their bases forming a pattern called collar
 - They are green when they first appear but soon wither, bleach and all photosynthesis occurs in the stems
 - The stems are ribbed with obvious nodes and internodes
 - There are numerous stomata on the grooves between the ribs
15. What is the function of heterocysts cells in blue green algae?
- Convert carbon iv oxide to carbohydrates
 - Nitrogen fixation
 - Carry out photosynthesis
 - For excretion

SECTION B: SHORT ANSWER QUESTIONS (5 Marks Each)

Your answers should be brief and to the point (Use the examination answer book provided)

16. Explain asexual reproduction in *Chlamydomonas*
17. Highlight morphological and physiological bases of classification of algae

18. Explain sexual reproduction in spirogyra
 19. Outline any five characteristics of brown algae
 20. Explain characteristics of pteridophytes
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21. Describe the structure of the fern frond

SECTION C: ESSAY QUESTIONS (25 Marks Each)

Answer any ONE question from this section

22. Discuss sexual reproduction in mosses
23. Discuss the human and ecological relevance of lichens
24. Write an essay on the structural differences between thalloid liverworts and leafy liverworts

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