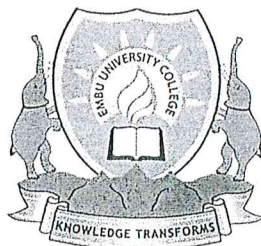


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REG NO: _____



EMBU UNIVERSITY COLLEGE
(A CONSTITUENT COLLEGE OF THE UNIVERSITY OF NAIROBI)

FIRST SEMESTER EXAMINATION 2013/2014

FIRST YEAR EXAMINATION FOR THE DEGREE OF BACHELOR OF
SCIENCE/BIOLOGY/MICROBIOLOGY AND BIOTECHNOLOGY/ENVIRONMENTAL
CONSERVATION

SBT 101: SURVEY OF THE PLANT KINGDOM

DATE: NOVEMBER 28, 2013

TIME: 2.00 – 4.00PM

INSTRUCTIONS:

Answer ALL Questions from SECTIONS A and B, and ONE Question selected from Section C.

SECTION A: Multiple Choice Questions (15 Minutes, 1 Mark each).

1. Which of the following does not belong to the archaeal group.
 - Methanogens
 - Halophiles
 - Thermophiles
 - Nitrogen fixers
2. Hair like appendages that are shorter, straighter and thinner than flagella and are used for transfer of DNA in bacteria are known as
 - Fimbriae
 - Flagella
 - Nucleoid
 - Glycocalyx

3. *Nostoc* is common in internal cavities of

- Hornworts
- Mosses
- Ferns
- Liverworts

4. Asexual reproduction in *Marchantia* is through

- Gemmae
- Spores
- Seeds
- Zoospores

5. *Psilotum* and *Tmesipteris* belong to which order

- Psilotales
- Arecales
- Marchantiales
- Poales

6. Sori is found in

- Ferns
- Gymnosperms
- Liverworts
- Pines

7. Evolution of the leaf is described by the

- Telome theory
- Endosymbiotic theory
- Autogenous theory
- Secondary endosymbiotic theory

8. Bacteria that divide in 3 planes and remain attached in cube like groups of 8 are known as

- Cocci
- Sarcinae
- Bacilli
- Diplococci

9. Which gymnosperm genera has double fertilization

- Psilotum*
- Ephedera*

Polytrichum

Gnetum

10. Ovulate cones are found in

Angiosperms

Bryophytes

Gymnosperms

Pteridophytes

11. Betalain compounds are produced by which order of plants

Ranunculales

Arecales

Poales

Caryophyllales

12. A stele with a solid core of xylem surrounded by phloem is known as

Siphonostele

Protostele

Solenostele

Dictyostele

13. Which group of bryophytes have a bilobed thallus

Hornworts

Liverworts

Mosses

Ferns

14. The 70S ribosome unit is found in

Gymnosperms

Bacteria

Angiosperms

Pteridophytes

15. In ferns, which reproductive structure is found among the rhizoids

Antheridia

Archegonia

Spores

Seeds

SECTION B: SHORT ANSWER QUESTIONS (30 Minutes; 5 Marks Each)

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

16. Draw a labeled diagram of the structure of an eukaryotic cell.
17. Illustrate the lifecycle of a moss.
18. Distinguish between a seed and a spore.
19. Describe the telome theory.
20. State the distinct characteristics of the orders Arecales, Poales and Zingiberales.
21. Outline the steps you would take to process a seedless vascular plant from collection in the field to maintenance in the herbarium.

SECTION C: ESSAY QUESTIONS (45 MINUTES; 25 MARKS EACH)

Write an essay on any ONE of the following topics (Use the examination answer book provided).

22. Describe 4 characteristics each of the genera *Lycopodium* and *Selaginella* and illustrate their lifecycles.
23. Describe using examples 7 major characteristics of plants in the divisions Cycadophyta, Ginkgophyta and Gnetophyta.
24. Discuss the angiosperm lifecycle and give 7 characteristics of this group of plants.

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