

BLG1502

May/June 2013

ANIMAL AND PLANT DIVERSITY

Duration 2 Hours

100 Marks

EXAMINERS

FIRST
SECOND

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PROF SR MAGANO

Closed book examination

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This examination paper consists of FIVE pages

ANSWER ALL QUESTIONS

[TURN OVER]

QUESTION 1

Choose the best answer for each of the following questions. Write only the number with the correct answer next to it. Each answer must be on a separate line in your answer book.
Example 1 1 a

- 1 1 In Chlamydomonas
- A the adult is haploid
 - B the zygospore survives times of stress
 - C. sexual reproduction occurs
 - D asexual reproduction occurs
 - E all of the above are correct
- 1 2 Land plants no longer required water as a medium for reproduction with the evolution of
- A fruits and roots
 - B Flowers and leaves
 - C Cell walls and rhizoids
 - D Lignified stems
 - E Seeds and pollen
- 1 3 Which of the following characteristics of plants is absent in their closest relatives, the charophytes?
- A chlorophyll b
 - B cellulose in cell walls
 - C formation of cell plate during cytokinesis
 - D alternation of generation
 - E sexual reproduction
- 1 4 The correct sequence, from the most to the least comprehensive, of the taxonomic levels listed here is
- A family, phylum, class, kingdom, order, species, genus
 - B phylum, family, class, order, kingdom, genus, species
 - C kingdom, phylum, order, class, family, genus, species
 - D Phylum, kingdom, order, class, species, family, genus
 - E kingdom, phylum, class, order, family, genus, species
- 1 5 Which feature (s) do ferns share with all other land plants?
- A Sporophyte and gametophyte life cycle stages
 - B Gametophytes supported by a thallus
 - C Dispersal of spores from a sorus
 - D Asexual reproduction by way of gemmae
 - E Water uptake by means of rhizoids

[TURN OVER]

- 1 6 An advantage of asexual reproduction is that
- A asexual reproduction produces offspring that respond effectively to new pathogens
 - B asexual reproduction enhances genetic variability in the species
 - C asexual reproduction allows the species to endure long periods of unstable environmental conditions
 - D asexual reproduction enables the species to rapidly colonize habitats that are favorable to that species
 - E asexual reproduction allows a species to readily rid itself of harmful mutations
- 1 7 A cloaca is an anatomical structure found in many nonmammalian vertebrates, which functions as
- A a source of nutrients for developing sperm in the testes
 - B a specialized sperm-transfer device produced by males
 - C a gland that secretes mucus to lubricate the vaginal opening
 - D a common exit for the digestive, excretory, and reproductive systems
 - E a region bordered by the labia minora and clitoris in females
- 1 8 An example of a connective tissue is the
- A nerves
 - B cuboidal epithelium
 - C skin
 - D blood
 - E smooth muscles
- 1 9 Septic shock, a systemic response including high fever and low blood pressure, can be life threatening. What causes septic shock?
- A Certain bacterial infections
 - B Increased production of neutrophils
 - C The presence of natural killer cells
 - D A fever of 103 degrees in adults.
 - E Specific forms of viruses
- 1 10 To leave the digestive tract, a substance must cross a cell membrane. During which stage of food processing does this take place?
- A digestion
 - B elimination
 - C hydrolysis
 - D absorption
 - E ingestion

[2×10= 20]

[TURN OVER]

QUESTION 2

- 2 1 List five (5) differences between monocotyledonous plants and dicotyledonous plants
Present your results in a table (10)
- 2 2 Environmental adaptations may result in roots being modified for a variety of functions
Name at least five (5) different types of modified roots and their functions (5)
[15]

QUESTION 3

Give a schematic and labelled representation of the life cycle of a moss. Include blocks of information to explain each stage **[15]**

QUESTION 4

Name the FIVE characteristics which define land plants **[5]**

QUESTION 5

Define and give an example of an animal in each of the following cases

- 5 1 Radial symmetry
5 2 Bilateral symmetry **[8]**

QUESTION 6

Name the hormones of

- 6 1 gonads (3)
6 2 adrenal gland (4)
6 3 the anterior pituitary gland (6)
6 4 pineal gland (1)
[14]

QUESTION 7

Describe the process of conduction, convection, radiation and evaporation **[8]**

QUESTION 8

Distinguish between antigens and antibodies **[5]**

[TURN OVER]

QUESTION 9

Give the functions of each of the following

- 9 1 Distal tubule
- 9 2 Collecting duct
- 9 3 Proximal tubule
- 9 4 Descending limb of the loop of Henlé
- 9 5 Ascending limb of Henlé

[10]**TOTAL: 100 Marks**

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