BLG1502

ANIMAL AND PLANT DIVERSITY

Duration 2 Hours  100 Marks

EXAMINERS
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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

[2x10 = 20]
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)

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)
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