

**BLG1501**

October/November 2011

**BASIC BIOLOGY**

Duration 2 Hours

100 Marks

EXAMINERS  
FIRST  
SECOND

DR MA NYILA  
DR LS TEFFO

---

This examination question paper remains the property of the University of South Africa and may not be removed from the examination venue

**This paper consists of FIVE (5) pages.**

**ANSWER ALL THE QUESTIONS ON THE EXAMINATION ANSWERBOOK PROVIDED.**

This study resource was shared via CourseHero.com

[TURN OVER]

**QUESTION 1**

**WRITE ONLY THE CORRECT LETTER NEXT TO THE CORRESPONDING NUMBER IN YOUR ANSWER BOOK, FOR EXAMPLE: 1.1 C.**

- 1 1 An atom is defined as a smallest particle of \_\_\_\_\_  
A a compound that can take part in chemical reaction  
B an element that can take part in chemical reaction  
C a molecule that reacts with other molecules  
D an isotope that take part in chemical reaction  
E a compound that react with other compounds
- 1 2 The three domains of life are \_\_\_\_\_  
A eukarya, fungi and bacteria  
B eukarya, archaea and bacteria  
C eukarya, fungi and animalia  
D eukarya, archaea and fungi  
E eukarya, bacteria and animalia
- 1 3 The correct definition of isotopes is \_\_\_\_\_  
A atoms of the different elements that have the same number of neutrons, but differ in the number of protons  
B atoms of the same element containing the same number of protons, but differ in the number of electrons  
C atoms of the same element containing the same number of protons, but differ in the number of neutrons  
D atoms of the same element containing the same number of electrons, but differ in the number of neutrons  
E atoms of different elements that have the same number of neutrons, but differ in the number of electrons

**[TURN OVER]**

- 1 4 Van der Waals interaction is a bond formed by \_\_\_\_\_
- A polar positively charged and polar negatively charged atoms
  - B polar positively charged and non-polar negatively charged atoms
  - C non-polar positively charged and non-polar negatively charged atoms
  - D positively charged and negatively charged atoms
  - E non-polar positively charged and negatively charged atoms
- 1 5 Chitin is an example of a \_\_\_\_\_
- A polypeptide
  - B polysaccharide
  - C fat
  - D nucleic acid
  - E glycerol
- 1 6 The electron configuration  $1s^2 2s^2 2p^6$ , belongs to \_\_\_\_\_
- A carbon
  - B oxygen
  - C nitrogen
  - D neon
  - E magnesium
- 1 7 Ribosomes are responsible for \_\_\_\_\_
- A protein synthesis
  - B digestive compartments
  - C photosynthesis
  - D controlling the centre of the cell
  - E the removal of waste from the cell
- 1 8 The mass number refers to \_\_\_\_\_
- A the number of protons in an atom
  - B the combined number of protons and neutrons in an atom
  - C the number of electrons in an atom
  - D the combined number of protons and electrons in an atom
  - E the number of neutrons and electrons in an atom

[TURN OVER]

1 9 Chloroplasts are responsible for \_\_\_\_\_

- A the shipping and receiving centre
- B digestive compartments
- C photosynthesis
- D controlling the centre of the cell
- E protein synthesis

1 10 In DNA, double helix, adenine pairs with \_\_\_\_\_, and guanine pairs with \_\_\_\_\_

- A cytosine, thymine
- B guanine, adenine
- C uracil, cytosine
- D thymine, cytosine
- E cytosine, uracil

(10 x 2 = 20)

**[20]**

## QUESTION 2

2 1 Explain how edges and corridors can strongly influence landscape biodiversity (6)

2 2 Distinguish between the fate of pyruvate in alcohol fermentation and in lactic acid fermentation (6)

2 3 Compare in tabular form the process of fermentation and cellular respiration (10)

2 4 Name three domains of life (3)

**[25]**

## QUESTION 3

3 1 In sesame plants, the one-pod condition (P) is dominant to the three-pod condition (p) Normal leaf (L) is dominant to wrinkled leaf (l) A homozygote in one-pod condition and normal leaves is crossed with a homozygote in three-pod condition and wrinkled leaves Use a Punnett square to predict the phenotypic and genotypic ratios of the F<sub>2</sub> generation (19)

**[TURN OVER]**

3 2 Distinguish between parasitism, mutualism and commensalism (6)

3 3 Define the following terms

3 3 1 diploid

3 3 2 primosome

3 3 3 ecotone

3 3 4 enthalpy

3 3 5 climax community

(1 x 5)

**[30]**

#### QUESTION 4

4 1 Compare a prokaryotic cell to a eukaryotic cell (10)

4 2 List the seven properties of life (7)

4 3 What is an isotope? Discuss this phenomenon with regard to the medical application of radioisotopes (5)

4 4 Give the electron configuration of oxygen (3)

**[25]**

**TOTAL: 100**