

BMI2604

May/June 2016

MOLECULAR BIOLOGY

Duration 2 Hours

100 Marks

EXAMINERS

FIRST

SECOND

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Closed book examination

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 2 pages

ANSWER FIVE (5) OF THE SEVEN (7) QUESTIONS

Students must answer the questions in the examination answer book provided.

Dear student, take a deep breath, exhale and relax. Now you are ready to start answering the questions. All the best!

[TURN OVER]

QUESTION 1 [20]

Discuss similarities and differences between prokaryotic and eukaryotic cells

QUESTION 2 [20]

Discuss the helical structures of proteins and deoxyribonucleic acid (DNA) In your answer provide details of the overall structure of these macromolecules, the subunits making up these macromolecules and the stabilizing non-covalent bonds/forces associated with their structure

QUESTION 3 [20]

Discuss eukaryotic gene regulation

QUESTION 4 [20]

Discuss DNA replication and repair

QUESTION 5 [20]

Discuss the following

5 1 Transport of molecules across membranes (10)

5 2 Intracellular organelles (10)

QUESTION 6 [20]

Discuss the following laboratory techniques

6 1 Polymerase chain reaction (10)

6 2 Analysis of proteins isolated from cultured cells (10)

QUESTION 7 [20]

Discuss the phases of the cell cycle, mitosis and apoptosis

TOTAL MARKS: 100