UNIVERSITY OF FORT HARE

Information Flow
BCH 323

DEGREE EXAMINATIONS

November
2018

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Time:	**3 Hours**
Subject:	**Information Flow**
Marks:	**100**

This paper consists of 2 pages including the cover page

Internal Examiners	**External Examiners**
Prof NT Mkwetshana	**Dr B Wilhelmi**

INSTRUCTIONS

Answer all the questions

Question 1

Discuss DNA and RNA with special reference to their structures, stability and functions of these two supermolecules. (30)

Question 2

Discuss DNA replication in general with specific reference to the role of DNA dependent DNA polymerase, formation of replication forks, unidirectional vs bidirectional replication, role of DNA gyrase, leading strand synthesis vs lagging strand synthesis and Okazaki fragments, DNA ligase and RNA primers. (20)

Question 3

Describe the functions of the following enzymes:

a. Initiator protein (DnaA)
b. Helicase (DnaB)
c. Primase
d. Single-strand binding protein
e. Topoisomerase
f. DNA polymerase I
g. DNA polymerase II
h. DNA polymerase III
i. DNA polymerase IV and V
j. DNA ligase (10)

Question 4

Define the term "wobble base pairs" and give examples of them and define the wobble hyphothesis theory. (10)

Question 5

Explain reverse transcriptase using HIV as an example. (10)

Question 6

Describe translation in detail with special emphasis on the following steps:

i. Activation
ii. Initiation
iii. Elongation
iv. Termination (20)