

UNIVERSITY OF ESWATINI  
DEPARTMENT OF BIOLOGICAL SCIENCES  
RESIT EXAMINATION PAPER MAY 2019

**TITLE OF PAPER:** DRUG METABOLISM & TOXICOLOGY

**COURSE CODE:** BIO484

**TIME ALLOWED:** THREE HOURS

**INSTRUCTIONS:**

1. ANSWER ALL FOUR (4) QUESTIONS IN THIS PAPER
2. EACH QUESTION CARRIES 25 MARKS
3. ILLUSTRATE YOUR ANSWERS WITH LARGE AND CLEARLY LABELLED DIAGRAMS WHERE APPROPRIATE

**SPECIAL REQUIREMENTS:** NONE

THIS PAPER IS NOT TO BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATORS

**Question 1**

Explain the difference between the following terms:

- (a) Bioavailability and bioequivalence, (5 marks)
- (b) Absolute bioavailability and relative bioavailability, (5 marks)
- (c) Efficacy and therapeutic effect, (5 marks)
- (d)  $EC_{50}$  and  $LD_{50}$ , (5 marks)
- (e) Toxicokinetics and toxicodynamics, (5 marks)

**[Total = 25 marks]**

**Question 2**

Discuss the factors that affect xenobiotic toxicity. (25 marks)

**Question 3**

Discuss conjugation reactions, highlighting how metabolised xenobiotics may be re-absorbed in to the circulatory system. (25 marks)

**Question 4**

Give an overview of reactions that convert a lipophilic xenobiotic into a hydrophilic end product. (25 marks)

**END OF EXAMINATION PAPER**