UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER 2017/18

TITLE OF PAPER: POPULATION DYNAMICS

COURSE CODE: BIO620

TIME ALLOWED: THREE HOURS

INSTRUCTIONS: 1. ANSWER ALL THREE (3) QUESTIONS.
2. EACH QUESTION CARRIES 30 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 what a density-dependent population growth model is, and the variety of forms that it can take.

[30 marks]

QUESTION 2

How can age-specific survival be introduced into a population growth model?

[30 marks]

QUESTION 3

Discuss in detail how SIR models operate for predicting disease outbreaks.

[30 marks]