

UNIVERSITY OF SWAZILAND



SUPPLEMENTARY EXAMINATION PAPER 2016

TITLE OF PAPER : POPULATION ESTIMATES AND PROJECTIONS

COURSE CODE : DEM 301

TIME ALLOWED : TWO (2) HOURS

INSTRUCTION : ANSWER ANY THREE QUESTIONS

REQUIREMENT : SCIENTIFIC CALCULATOR

Question 1

Table 1: Total population by Rural-Urban Residence, Swaziland 1997-2007

Residence	Population (1997)	Population (2007)
Rural	715,290	793,156
Urban	214,428	225,293

Use the data in Table 1 to answer the questions below:

- Calculate the annual exponential growth rate of Swaziland in 1997-2007 [2]
- Calculate the annual average percentage change in each residence [2]
- Calculate the projected percentages of the population in 2017 and 2027 in each residence [8]
- Calculate the projected populations in 2027 and 2027 in each residence [8]

[20 marks]

Question 2

Briefly define the following terms and give examples and formulas where applicable:

- Intrinsic growth rate [5]
- Mid-year population [5]
- Non-censal counts [5]
- Logistic curve [5]

[20 marks]

Question 3

Describe each of the methods for population estimation given below and outline their computational procedures including the relevant formulas:

- Period-fertility method, Method A [10]
- Census cohort change method [10]

[20 marks]

Question 4

Table 2: Population of Italy and Uganda in 2000 and 2010

Country	Population	
	July 1 st 2000	July 1 st 2010
Italy	56,986,000	60,555,000
Uganda	24,213,000	33,425,000

Use the data in Table 2 to calculate the following indicators:

- Annual rate of change between 2000 and 2010 for each country using the geometric and exponential methods [8]
- The time required for the population to double for each country using the geometric method [4]
- Calculate the expected population of each country in April 16th, 2025 using the geometric growth model [6]
- Assuming a continuation of the 2000-2010 geometric growth rate and using 2010 as the base date, when will the population of Uganda reach 70 million? [2]

[20 marks]