JULIUS NYERERE SCHOOL OF SOCIAL SCIENCES

DEPARTMENT OF SOCIOLOGY AND SOCIAL ANTHROPOLOGY

MASTER OF DEMOGRAPHY AND POPULATION STUDIES

LEVEL 1 SEMESTER 1

EXAMINATION QUESTION PAPER

MODULE CODE	**PSM511**
MODULE NARRATION	**DEMOGRAPHIC TECHNIQUES I**
DATE	**2025**
DURATION	**3 HOURS**

INSTRUCTIONS TO CANDIDATES:

1. The Examination paper contains five (5) questions and you are required to attempt any three (3) questions.
2. Each question carries twenty-five (25) marks. Marks for part questions are shown in brackets [].
3. Begin the answer to each question on a fresh page of the answer booklet/sheet.
4. Scientific calculators may be brought into the Examination room for use in computational questions.

On your desktop is an Excel sheet 'PSM511' with data you should use for all your computations. Note that the data for each question appears on a separate sheet. Rename the 'PSM511' Excel sheet using your registration number, e.g., M013161. It is recommended that you constantly save your work on the desktop as you are working.

1. (a) using data on Excel sheet1 calculate the following:

(i) Population as of 1 January 2025 **(2 marks)**

(ii) CDR **(1mark)**

(iii) CBR **(1 mark)**

(iv) CRIM **(1 mark)**

(v) CROM **(1 mark)**

(vi) CGR **(2 marks)**

(vii) Crude Rate of Natural Increase **(2 marks)**

(viii) Crude Rate of Net Migration **(2 marks)**

(ix) Growth rate **(2 marks)**

(x) the doubling time **(3 marks)**

(b) Does the population equation balance? Show proof. **(5 marks)**

(c) write brief notes on linear growth rate and logistic growth rate. **(5 marks)**

2. (a) Complete the life table on Excel sheet 2. **(12 marks)**

(b) Using the life table on data 2(a) calculate the following

(i) Life expectancy at birth **(2 marks)**

(ii) Life expectancy at 30 **(2 marks)**

(iii) Probability of surviving from birth to age 40 **(2 marks)**

(iv) The probability that a person who survived to age 40 would die before age 60 **(2 marks)**

(v) number of years that a newborn could expect to live in the age interval 25 to 50 **(3 marks)**

(vi) the probability that a newborn will die between ages 70 and 85. **(2 marks)**

3. (a) using data on Excel sheet 3, compare the population structures of American Samoa and Cuba. **(15 marks)**

(b) Calculate and interpret the total demographic pressure for each country. **(5 marks)**

(c) Compare the countries' demographic pressures. **(5 marks)**

4. (a) Using data on Excel sheet 4, decompose the mortality data. **(15 marks)**

(b) Calculate the CDR of Zimbabwe using Finland as the standard. **(5 marks)**

(c) Interpret your findings. **(5 marks)**

Data for question 1

Data on the population size, births, deaths, immigrations and outmigrations in Bulaway

Data from the Housing and Census 2022

pt	665952
in migration	263924
out migration	201045
birth	14521
deaths	6208

o, 1 January 2022.