

UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER 2006

TITLE OF PAPER: INTRODUCTION TO DEMOGRAPHY

COURSE CODE : DEM 101

TIME ALLOWED : TWO (2) HOURS

**INSTRUCTIONS : ANSWER QUESTION 1 AND ANY OTHER TWO
(2) QUESTIONS.**

**PLEASE DO NOT OPEN THIS PAPER UNTIL PERMISSION HAS BEEN
GRANTED BY THE INVIGILATOR**

QUESTION 1 (Compulsory) (5+3+3+3+3)

You are provided with the attached data for New York State in 1980 (Annex 1).

Compute the following measures:

- a. Crude rate of natural increase;
- b. General fertility rate,
- c. Infant mortality rate,
- d. Sex ratio at birth,
- e. Aged-child ratio, and
- f. Dependency ratio.

QUESTION 2 (3+5+6+6marks)

- a. Defining all symbols, describe briefly the balancing equation which relates the number of people in a population at two time points to another.
- b. Suppose there were 100,000 forty year olds in a particular population and that the growth rate of the population in this age group was 3% per annum. Estimate the number of these forty year olds in five years time.
- c. What is meant by doubling time? Compute the doubling time for a population growing at 2.9%.
- d. Briefly describe the following models of population growth: arithmetic and geometric.

QUESTION 3 (8+8+4 marks)

Write short notes on the following:

- a. Importance of data on age structure:
- b. Measures of age structure;
- c. Methods used to determine unknown age.

QUESTION 4**(4+4+4+4+4 marks)**

Distinguish fully between the following concepts and measures:

- a. Total fertility rate and general fertility rate;
- b. Defacto and dejure population count;
- c. Fecundity and fecundability;
- d. Rates and probabilities in demography; and
- e. Population structure and population distribution.

QUESTION 5**(10+10 marks)**

Describe the essential characteristics of any two of the following sources of demographic data:

- a. Demographic survey;
- b. Vital statistics system; and
- c. Population Register.

ANNEX 1 Demographic data for New York State in 1980

Population

Age	Males	Females
0-4	580,389	555,536
5-9	605,546	579,333
10-14	717,004	689,056
15-19	803,639	794,932
20-24	737,556	782,390
25-29	690,997	737,379
30-34	649,344	702,495
35-39	526,286	580,621
40-44	446,856	489,456
45-49	433,243	478,268
50-54	469,110	527,492
55-59	456,018	523,352
60-64	382,502	458,505
65-69	312,502	412,020
70-74	229,349	338,557
75-79	153,100	260,457
80-84	88,035	173,764
85+	57,946	135,037
Total	8,339,422	9,218,650

Deaths to New York State residents by age and sex in 1980

Age	Male	Female
<1	1,673	1,321
<5	1,954	1,537
5-9	196	123
10-14	223	145
15-19	936	354
20-24	1,401	453
25-29	1,424	486
30-34	1,441	615
35-39	1,366	736
40-44	1,749	1,047
45-49	2,648	1,606
50-54	4,398	2,767
55-59	6,504	4,083
60-64	8,523	5,655
65-69	10,652	7,545
70-74	11,808	9,594
75+	33,473	46,303
Total	88,710	83,059

Births to New York State females by sex of child in 1980 were:

Age	Male	Female
10-14	242	269
15-19	14,244	13,455
20-24	35,618	34,054
25-29	40,530	39,235
30-34	23,904	22,722
35-39	6,907	6,585
40-44	1,065	1,060
45+	51	36

~~TABLE~~