

UNIVERSITY OF SWAZILAND
FINAL EXAMINATION PAPER 2011

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.

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QUESTION 1 (Compulsory) (6+6+5+5+5+4+5+4)

- a. You are provided the following demographic data for Japan in 1950, 1990, and 1997:

	1950	1990	1997
Births	2 337 507	1 221 585	1 190 000
Deaths	904 876	820 305	917 000
Population	82 900 000	123 478 000	125 638 000

Based on above data, answer the following questions:

- i. What happened to the rate of natural increase from 1950 to 1997?
- ii. Compare the speed of growth of the population between 1950 and 1990 and between 1990 and 1997.
- iii. Estimate the population of Japan in 2010. State your assumptions.
- iv. If the population of Japan continued growing at the rate experienced between 1990 and 1997, in which year would it reach 150 million? (Use geometric growth model).

- b. **Fertility data for Australia in 1996:**

Age	Total births by age of mother	Female births by age of mother	Number of women
15-19	12 509	5 988	621 542
20-24	44 837	21 807	694 273
25-29	82 782	40 278	709 746
30-34	76 435	37 227	720 453
35-39	31 864	15 539	727 555
40-44	5 113	2 470	672 182
45-49	128	61	640 985

- i. Compute the total fertility rate and interpret it;
- ii. Calculate the general fertility rate and interpret it;
- iii. Compute the median age at childbearing and interpret it;
- iv. Calculate the sex ratio at birth and interpret it.

QUESTION 2 (6+4+5+8+7 marks)

- a. Distinguish fully between demographic rates and ratios.
- b. Why are demographic rates often used in preference to total numbers of births and deaths?

- c. Why is the mid-year population commonly used as the denominator for demographic rates?
- d. What are “crude” rates? Using your knowledge of the nature of crude rates, write down formulas, in words, for the crude marriage rate and the crude divorce rate. Explain any disadvantages of the two rates.
- e. Distinguish fully between an arithmetic growth model and a geometric growth model. Which one gives a better approximation of population change?

QUESTION 3 (8 +5+8+5+4 marks)

- a. Outline four measures of age structure, and explain how each is interpreted.
- b. Describe a fertility measure that does not use fertility data in its computation. What are its limitations?
- c. Explain how the following concepts are related: sampling error and sample size, sampling frame and target population, probability sampling and random selection, vital registration and vital statistics.
- d. “There is no reason to conduct population censuses if you conduct regular demographic surveys.” Comment on this statement.
- e. What is meant by replacement level fertility?

QUESTION 4 (5+5+5+5+5+5 marks)

Distinguish fully between the following concepts and measures and state how they are related (if they are related):

- a. step migration and chain migration;
- b. health demography and epidemiology;
- c. de-facto and de-jure population counts;
- d. general sex ratio and masculinity proportion;
- e. fertility and fecundability;
- f. perinatal mortality and infant mortality.