UNIVERSITY OF SWAZILAND

DEPARTMENT OF STATISTICS AND DEMOGRAPHY

SUPPLEMENTARY EXAMINATION 2014

TITLE OF PAPER   :   INTRODUCTION TO DEMOGRAPHY

COURSE CODE   :   DEM 101

TIME ALLOWED   :   TWO (2) HOURS

INSTRUCTIONS   :   ANSWER ALL QUESTIONS;
SHOW ALL YOUR WORKINGS WHERE
APPLICABLE.

REQUIREMENTS   :   CALCULATOR

THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION HAS BEEN
GRANTED BY THE INVIGILATOR

Question 1 [Total=25 marks]

a. Give four reasons why age is an important demographic variable. [4]

b. Briefly explain what is meant by the following two terms: [4]
   i. Age heaping
   ii. Age shifting

c. Compare and contrast each pair of concepts listed below:
   i. Sampling errors and nonsampling errors; [2]
   ii. Incidence and prevalence; [2]
   iii. De jure census and De facto census; and [2]
   iv. Fecundity and fertility. [2]

d. Describe three problems involved in Africa in setting up and maintaining a countrywide population register. [3]

e. Explain four problems associated with measuring migration. [4]

f. Outline the essential features of a civil registration system. [2]
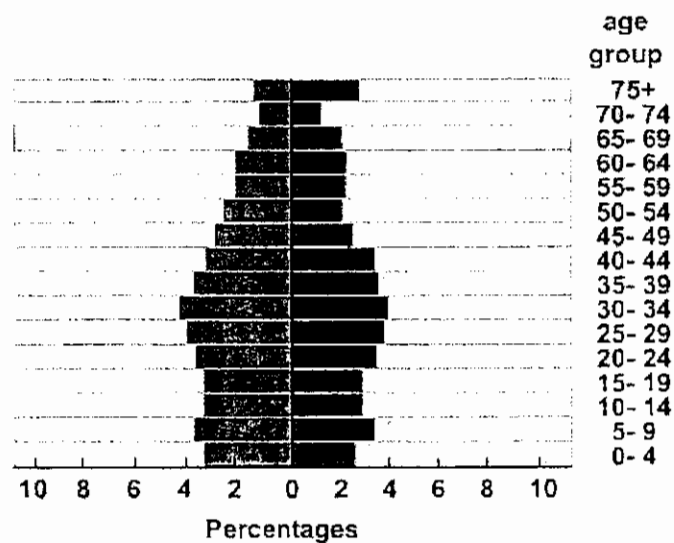

Question 2 [Total=25 marks]

a. Using information from the table below for a certain region in country A, answer the following questions, using the geometric growth formula for 2a(iii)-(vi):

Year	Mid-year population
1970	3069
1980	3772
1990	4721
2000	5413

i. What was the per cent change in the region of country A in **each** decade? [3]

ii. Calculate the average annual numerical increase in the population in each decade? [3]

iii. Calculate the average annual per cent growth rate in each decade? [3]

iv. Using your answers in part iii), how long would the population in the region of country A take to triple for each decade? [3]

v. What assumption(s) are you to making to reach your answer in part (iv)? [3]

vi. Using the average growth rate from (iii), estimate the year in which the population reached 2.5 million. [2]

b. The figure given below belongs to a population of a country B.

age group

| 75+ |
| 70- 74 |
| 65- 69 |
| 60- 64 |
| 55- 59 |
| 50- 54 |
| 45- 49 |
| 40- 44 |
| 35- 39 |
| 30- 34 |
| 25- 29 |
| 20- 24 |
| 15- 19 |
| 10- 14 |
| 5- 9 |
| 0- 4 |

10 8 6 4 2 0 2 4 6 8 10

Percentages

i. Interpret fully the figure above for Country B [4]

ii. State two measures of population composition and write their respective formula. [4]

Question 3 [Total=25 marks]

a. The data given in table below is for a certain developing African country in 1990.

Mid-year female population and per cent distribution of live births by maternal age, 1990

Age	Female population	Per cent distribution of live births
10-14	15,200	0.46
15-19	18,120	2.95
20-24	20,255	29.51
25-29	21,124	27.57
30-34	19,687	18.97
35-39	27,899	14.52
40-44	24,784	4.45
45-49	22,123	1.57

3

In addition, the following information is provided for the same year:

Total female population	340,100
Children under five years	96,100
Girls under five	51,522
Total live births	10,200
General sex ratio	98
Sex ratio at birth	102
Post neonatal deaths	109
Neonatal deaths	147
Early neonatal deaths	107
Still births	200
Maternal deaths	243

Using the information given above to answer the questions for 3a(i)-viii):

i.   Calculate the crude birth rate and interpret your answer;   [4]

ii.   Why is a crude birth rate not a good indicator for comparing populations?   [2]

iii.   Calculate the general fertility rate;   [2]

iv.   Calculate the total fertility rate and comment on your answer;   [7]

v.   Calculate the gross reproduction rate;   [2]

vi.   Calculate the infant mortality rate and comment on your answer;   [4]

vii.   Calculate the child woman ratio;   [2]

viii.   Calculate the mean age of child bearing;   [2]