UNIVERSITY OF SWAZILAND

DEPARTMENT OF STATISTICS AND DEMOGRAPHY

MAIN EXAMINATION 2017

TITLE OF PAPER : INTRODUCTION TO DEMOGRAPHY

COURSE CODE : DEM 102

TIME ALLOWED : TWO (2) HOURS

INSTRUCTIONS : ANSWER QUESTIONS 1 AND 2 AND EITHER QUESTION 3 OR 4; SHOW ALL YOUR WORKINGS WHERE APPLICABLE.

REQUIREMENTS : CALCULATOR

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

Question 1 (COMPULSORY)   **[25 marks]**

a. Table 1.1 data relate to a Country A. They come from a large-sample survey of the
    population of the Country which took place in 2001. You are also told that the total number
    of urban women in the survey is 1,334 and that the total number of rural women in the
    survey is 10,518.

i. Calculate the general fertility rates for rural and urban areas, respectively; and   [6]

ii. Calculate total fertility rates for urban and rural areas, respectively.   [6]

Table 1.1 Population distribution and age specific fertility rates

Age group	Percentage (%) of all women in age group		Age-specific fertility rates (per woman)	
	Urban	Rural	Urban	Rural
15-19	9.7	9.4	0.135	0.165
20-24	10.1	7.8	0.268	0.291
25-29	9	6.3	0.242	0.273
30-34	6.3	5.3	0.210	0.261
35-39	4.7	4.4	0.149	0.202
40-44	3.0	4.4	0.086	0.123
45-49	1.9	3.1	0.012	0.062

b. Table 1.2 gives the numbers of births, deaths of infants under 1 year, and deaths of infants
    aged under 28 days, in Country A for selected calendar years:

Table 1.2 Infant Births and Deaths in Country A

Year	Births	Number of deaths	
		under 1 year	under 28 days
1996	75500	718	400
2000	79250	582	346
2004	73200	452	307

i.   Calculate the percentage of infant deaths in 1996, 2000 and 2004 which were neonatal
     deaths.   [3]

ii. Calculate the infant mortality rates for each year, and comment on your answers.   [5]

iii. Calculate the neonatal mortality rates for each year, and comment on your answers; and [5]

Question 2 (COMPULSORY)   [25 marks]

a. Using information from the Table 2.1 for a certain region in Country B, answer the following questions, using the geometric growth formula for 2a(iii)-(vi):

Table 2.1 population for Country B, 1980-2010

Year	Mid-year population
1980	3712
1990	4521
2000	5213
2010	6167

i. What was the relative per cent change in the region of Country B in **each** decade?   [3]

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

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

iv. Using your answers in part iii), how long would the population in the province of Country B 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]

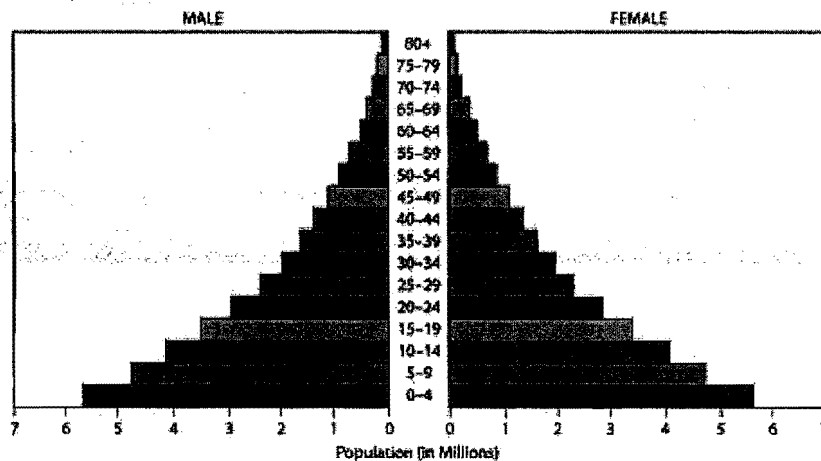b. Figure 2.1 belongs to a population of a Country B in 2008.

Figure 2.1 Population pyramid, Country B 2008

i. Interpret fully Figure 2.1 for Country B.   [4]

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

ANSWER

Question 3   [25 marks]

a) Explain three advantages of demographic surveys over population censuses.   [6]

b) Briefly explain two limitations of population registers in developing countries.   [4]

c) What are the advantages of multi-round surveys over single-round surveys?   [4]

d) Distinguish between *defacto* and *dejure* population count.   [3]

e) Outline the key characteristics of the following data sources:

     i.   Population register;   [2]

     ii.   Vital statistics system; and   [2]

     iii.   Census.   [4]

OR

Question 4   [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: [6]
     i.   Age heaping;
     ii.   Age shifting

c. Compare and contrast each pair of concepts listed below:
     i.   Coverage errors and content errors;   [2]
     ii.   Old population and young population;   [2]
     iii.   De jure census and De facto census; and   [2]
     iv.   Prospective surveys and retrospective surveys.   [2]

d. Describe three problems of particular relevance to Africa in setting up and maintaining a countrywide civil registration system.   [3]

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