UNIVERSITY OF SWAZILAND

DEPARTMENT OF STATISTICS AND DEMOGRAPHY

MAIN EXAMINATION 2015

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]

You are provided with data in Table 1 for region A in Country X.

Table 1: Data for region A of Country X

Indicator	2000	2010
Population (mid-year)	100 000	120 000
Number of women 15-49	-	20 000
Births	5 000	6 000
Deaths	2 000	1 800
Number of women 15-49	-	20 000
Girls under age 5	-	20 000
Children under age 5	-	40 000
Births between 2000 and 2010	55 000	
Deaths between 2000 and 2010	19 000	

Based on the data in Table 1:

a) Comment on what happened to the crude birth rate and crude death rate for region A between 2000 and 2010. [4]

b) Crude rates are not recommended for drawing comparisons between populations. Explain their limitations. [4]

c) Calculate the rate of natural increase in 2000 and 2010. [3]

d) Calculate the general fertility rate for region A in 2010. [3]

e) What was the net migration of region A for Country X between 2000 and 2010? [4]

f) Using the **geometric** growth formula, calculate the annual rate of growth of the population between 2000 and 2010. [4]

g) Assuming an **exponential** growth of 3 per cent for region A, in how many years would it take for the population of the region double in size? [3]

Question 2 [Total=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]

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Question 3   [Total=25 marks]

a. Describe how fertility, mortality and migration processes affect the age-sex composition of a population.   [9]

You are given data on both sexes for population, deaths and births for Country Y in 2009.

Table 2: Demographic data for country Y in 2009

Age	Population (mid-year) Male	Female	Deaths, 2009 Male	Female
under 1	1645	1573	22	16
1-4	7748	7390	4	3
5-9	9263	8837	2	2
10-14	8767	8347	3	2
15-19	9103	8651	12	4
20-24	9676	9345	16	5
25-29	10696	10617	20	7
30-34	10877	10986	24	9
35-39	9902	10061	28	11
40-44	8692	8924	30	15
45-49	6811	7062	33	19
50-54	5515	5836	42	25
55-59	5034	5497	61	37
60-64	4947	5669	94	61
65-69	4532	5579	128	89
70-74	3409	4586	148	113
75-79	2400	3722	158	143
80-84	1366	2568	138	163
85+	858	2222	152	311

Age	Births, 2009 Male	Female
10-14	152	99
15-19	604	598
20-24	1376	1200
25-29	1381	1241
30-34	1226	1120
35-39	517	456
40-44	58	45
45-49	19	14
50-54	9	4

In addition to data given in Table 2 you are also provided with the following data:

Maternal deaths	423
Miscarriages	6599
Still births	8921
Induced abortions	12561

b. Based on the data provided above, calculate the following measures:
i. Maternal mortality rate;   [2]
ii. Child dependency ratio;   [2]
iii. Total fertility rate;   [6]
iv. Infant mortality for both sexes combined; and   [3]
v. Age-specific death rates for females in the reproductive lifespan.   [3]

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