

UNIVERSITY OF SWAZILAND
DEPARTMENT OF STATISTICS AND DEMOGRAPHY
SECOND SEMESTER EXAMINATION 2016

TITLE OF PAPER : INTRODUCTION TO DEMOGRAPHY

COURSE CODE : DEM 101/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. The data in table Q1.1 relate to a Country X. They come from a large-sample survey of the population of the country which took place in 1992. 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; and [6]
- ii. Calculate **total fertility rates** for urban and rural areas. [4]

Table Q1.1

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 Q1.2 gives the numbers of births, deaths of infants under 1 year, and deaths of infants aged under 28 days, in a certain developing country in selected recent calendar years:

Table Q1.2

Year	Births	Number of deaths	
		under 1 year	under 28 days
1987	75500	718	400
1992	79250	582	346
1996	73200	452	307

- i. Calculate the percentage of infant deaths in 1987, 1992 and 1996 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]
- iv. Explain in brief four variables that have a great impact on the chances of survival of infants and under five children. [2]

Question 2 (COMPULSORY)

[25 marks]

- a. Defining all symbols, describe briefly the balancing equation which relates the number of people in a population at two points in time. [6]
- b. Suppose there were 10,000 forty year olds in a particular population and that the growth rate of the population in this age group was 2.3% per annum.
 - i. Estimate the number of these forty year olds in five years time, using the exponential growth model. [4]
 - ii. What is the advantage of using the exponential growth model? [1]
- c. What is meant by **doubling time**? Compute the doubling time for a population growing at 2.9%. [4]
- d. Describe in brief the i) arithmetic and ii) geometric population growth models. [10]

Answer

Question 3

[25 marks]

- a. Distinguish between the following concepts:
 - i. Incidence and prevalence; [2]
 - ii. Fecundity and fertility [2]
 - iii. Rates and probabilities in demography; and [2]
 - iv. Emigrant and immigrant. [2]
- b. Explain why migration is such a complex population dynamic which is difficult to define and measure. [8]
- c. Give a precise brief discussion on the following current mortality differentials in developing countries:
 - i. Occupation; [3]
 - ii. Rural-urban residence; and [3]
 - iii. Education. [3]

OR

Question 4

[Total=25 marks]

- a) Explain three advantages of demographic surveys [6]
- b) Briefly explain four uses of a sample in demography. [4]
- c) What are the advantages of a prospective survey over retrospective survey? [4]
- d) Distinguish between a coverage and content error. [3]
- e) Explain in brief the four essential features of a census [8]