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QUALIFICATION : **BACHELOR of SCIENCE IN APPLIED MATHEMATICS AND STATISTICS**	
QUALIFICATION CODE: **07BSAM**	LEVEL: **6**
COURSE: **DEMOGRAPHY**	COURSE CODE: **DEM602S**
DATE: **NOVEMBER 2023**	SESSION: **1**
DURATION: **3 HOURS**	MARKS: **80**

FIRST OPPORTUNITY: EXAMINATION QUESTION PAPER

EXAMINER: **MR. ANDREW ROUX**

MODERATOR: **MR. JAN SWARTZ**

INSTRUCTIONS

1. Answer all questions on the separate answer sheet.
2. Please write neatly and legibly.
3. Do not use the left side margin of the exam paper. This must be allowed for the examiner.
4. No books, notes and other additional aids are allowed.
5. Mark all answers clearly with their respective question numbers.

PERMISSIBLE MATERIAL

1. Non-Programmable Calculator

This paper consists of 3 pages including this front page

QUESTION 1 Mortality [28]

1.1) Distinguish between longevity and lifespan (2)

1.2) Name and briefly describe two components or aspects to consider in determining "the ability to resist death" (6)

1.3) Consult the life table provided below, and compute the following questions (1.3.1 – 1.3.10) (10x2=20)

Age	nMx	nqx	lx	ndx	nLx	Tx	ex
0-1	0.0168	**1.3.1**	**1.3.10**	1,656	98,592	6,191,628	61.92
1-5	0.00209	**1.3.2**	98,344	818	391,411	6,093,036	61.96
5-10	0.00067	**1.3.3**	97,526	326	486,813	5,701,625	58.46
10-15	0.0049	0.02420	**1.3.4**	2,353	480,116	5,214,812	53.65
15-20	0.00142	0.00707	94,847	**1.3.5**	472,557	4,734,696	49.92
20-25	0.00278	0.01380	94,176	1,300	**1.3.6**	4,262,140	45.26
25-30	0.00266	0.01321	92,876	1,227	461,311	**1.3.7**	40.86
30-35	0.0031	0.01538	91,649	1,410	454,720	3,333,199	**1.3.8**
35-40	0.00479	0.02367	90,239	2,136	445,856	2,878,479	31.90
40-45	0.00675	0.03319	88,103	2,924	433,207	2,432,623	27.61
45-50	0.0111	0.05400	85,179	4,600	414,397	1,999,416	23.47
50-55	0.01705	0.08176	80,580	6,589	386,426	1,585,019	19.67
55-60	0.02798	0.13075	73,991	9,675	345,768	1,198,593	16.20
60-65	0.03712	0.16984	64,316	10,923	294,273	852,825	13.26
65-70	0.05406	0.23812	53,393	12,714	235,180	558,551	10.46
70-75	0.0789	0.32951	40,679	13,404	169,886	323,371	7.95
75-80	0.09047	0.36891	27,275	10,062	111,220	153,486	5.63
85+	0.20726	**1.3.9**	17,213	8,760	42,265	42,265	2.46

QUESTION 2 : Fertility & Nuptiality [32]

2.1) Distinguish between the following:

2.1.1) Gross reproduction rate and net reproduction rate (4)

2.1.2) The direct method and the indirect method for calculating the age-standardised birth rate (4)

2.1.3) General Marriage rate and the total marriage rate. (4)

2.2) The total number of marriages for 2022 in the Khomas Region was 11 762 with a midyear population size 652 460 as well as the midyear population of marriageable persons are 205 684. Use c = 1 000.

2.2.1) Calculate and interpret the crude marriage rate for this region (5)

2.2.2) Calculate and interpret the general marriage rate for this region (5)

2.3) Consult the Age-specific Birth rate table provided, and answer the following questions:

TABLE 2 : Age-Specific Birth Rates

Age	Births	Female population
10 - 14	9 481	9 387 000
15 - 19	484 976	9 494 000
20 – 24	965 414	8 678 000
25 – 29	1 083 894	9 341 000
30 – 34	890 336	10 179 000
35 – 39	425 194	11 370 000
40 – 44	80 982	11 049 000
45 - 49	3 769	9 607 000

2.3.1) Calculate and interpret the General fertility rate (5)

2.3.2) Calculate and interpret the Total Fertility Rate. (5)

QUESTION 3 : Migration [20]

3.1) Briefly discuss the sources of data on migration (10)

3.2) There are data quality characteristics of which you should be aware. Name and describe some traits that you'll find within data quality. Factors affecting the quality of data on migration (10)

Xxxxxxxxxxxxxxx END OF EXAMINATION xxxxxxxxxxxxxxxxxxxxxx