



**NAMIBIA UNIVERSITY  
OF SCIENCE AND TECHNOLOGY  
FACULTY OF HEALTH AND APPLIED SCIENCES**

**DEPARTMENT OF MATHEMATICS AND STATISTICS**

<b>QUALIFICATION:</b> Bachelor of science in Applied Mathematics and Statistics	
<b>QUALIFICATION CODE:</b> 07BAMS	<b>LEVEL:</b> 6
<b>COURSE CODE:</b> DEM602S	<b>COURSE NAME:</b> DEMOGRAPHY
<b>SESSION:</b> NOVEMBER 2019	<b>PAPER:</b> THEORY
<b>DURATION:</b> 3 HOURS	<b>MARKS:</b> 100

<b>FIRST OPPORTUNITY EXAMINATION QUESTION PAPER</b>	
<b>EXAMINER</b>	Mr. A.J. ROUX
<b>MODERATOR:</b>	Mr J. J. Swartz

<b>INSTRUCTIONS</b>
<ol style="list-style-type: none"><li>1. Answer ALL the questions in the booklet provided.</li><li>2. Show clearly all the steps used in the calculations.</li><li>3. All written work must be done in blue or black ink and sketches must be done in pencil.</li></ol>

**PERMISSIBLE MATERIALS**

1. Non-programmable calculator without a cover.

**THIS QUESTION PAPER CONSISTS OF 4 PAGES** (Including this front page)

QUESTION 1: Introduction to Demography [24]

The table below shows data collected for the inhabitants of a rural settlement in the South of Namibia.

Age	Male	Male (%)	Female	Female (%)	Total
0--4	829	6.1	773	5.69	1602
5--9	724	5.33	663	4.88	1387
10--14	701	5.16	732	5.39	1433
15--19	761	5.6	744	5.48	1505
20--24	631	4.64	632	4.65	1263
25--29	449	3.3	477	3.51	926
30--34	372	2.74	384	2.83	756
35--39	358	2.64	382	2.81	740
40--44	398	2.93	390	2.87	788
45--49	390	2.87	378	2.78	768
50--54	329	2.42	343	2.52	672
55--59	246	1.81	304	2.24	550
60--64	185	1.36	212	1.56	397
65--69	124	0.91	188	1.38	312
70--74	84	0.62	115	0.85	199
75--79	64	0.47	76	0.56	140
80--84	36	0.26	55	0.4	91
85+	20	0.15	37	0.27	57

Use the data provided to calculate and interpret the following:

- 1.1) Child-Dependency Ratio (4)
- 1.2) Age Dependency Ratio (4)
- 1.3) Total Dependency Ratio (4)
- 1.4) Gender Ratio (4)
- 1.5) The median age of the population (8)

QUESTION 2: Mortality [36]

- 2.1) Carefully distinguish between the following, Neonatal ; Post-Neonatal & Child Mortality Rates (6)
- 2.2) Distinguish between proximate and non-proximate determinants of mortality, and give two examples for each (6)
- 2.3) Carefully consider the Life Table provided below, and find the missing values (a – l) by showing all your calculation : (12x2=24)

(1) $x \text{ to } x + n$	(2) $nMx$	(3) $nqx$	(4) $lx$	(5) $ndx$	(6) $nLx$	(7) $Tx$	(8) $ex$
0 - 1	0,01680	0,01655	100000	1655	98494	6344162	63,44
1 - 5	0,00209	0,00832	98345	818	391420	6245668	63,51
5-10	0,00067	0,00334	97527	326	486820	5854248	60,03
10-15	0,00049	0,00245	97201	238	485410	5367428	55,22
15-20	0,000142	a	c	e	g	i	k
20-25	0,00278	b	d	f	h	j	l
25-30	0,00266	0,01321	94948	1254	471604	3920856	41,29
30-35	0,00310	0,01538	93694	1441	464865	3449253	36,81
35-40	0,00479	0,02367	92252	2183	455804	2984389	32,35
40-45	0,00675	0,03319	90069	2989	442872	2528586	28,07
45-50	0,01110	0,05400	87080	4702	423642	2085715	23,95
50-55	0,01705	0,08176	82377	6736	395047	1662073	20,18
55-60	0,02798	0,13075	75642	9890	353482	1267026	16,75
60-65	0,03712	0,16984	65751	11167	300838	913544	13,89
65-70	0,05406	0,23812	54534	12997	240427	612706	11,22
70-75	0,07890	0,32951	41587	13703	173675	372279	8,95
75-80	0,09047	0,36891	27584	10287	113702	198604	7,12
80 +	0,20726	1,00000	17597	17597	84902	84902	4,82

