



School of Digital Health

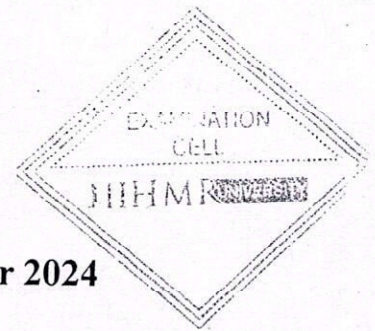
MBA Healthcare Analytics

Batch-01st (2024-2026)

First Year, Term 1, End Term Examinations, December 2024

CC – 606 Essentials of Demography

Enrolment No.:



Time - 3 Hour

Maximum Marks: 50 (Minimum Marks: 20)

Instructions to students:

- This question paper contains 3 printed pages.
- Don't write anything on the Question Paper except your Enrolment No.

Part A

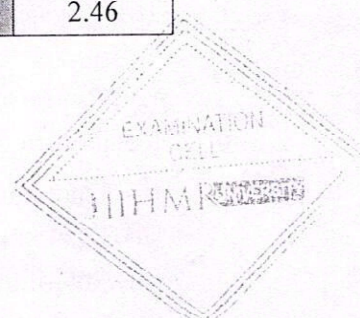
(Maximum Marks: 5)

Q1. Choose the correct option for the following (1 mark each):

- (a). A crude birth rate denotes the number of births to per 1000.
- (i) Total Male Population
 - (ii) Total Female Population
 - (iii) Both Male and Female Population
 - (iv) Female Population aged 15-49 yrs.
- (b). Typically, age-specific fertility rate is highest in:
- (i) Age group 15-19
 - (ii) Age group 25-34
 - (iii) Age group 20-29
 - (iv) Age group 30-34
- (c). If rate of population growth of country is 1 percent per annum, it will double in:
- (i) 35 years
 - (ii) 40 years
 - (iii) 60 years
 - (iv) 70 years
- (d). Total Fertility Rate (TFR) is defined as:
- (i) Total number of children to a woman during her reproductive time span.
 - (ii) Total number of females to a woman during her reproductive time span.
 - (iii) Any of the above may be true.
 - (iv) None of the above.
- (e). Identify the false statement
- (i) Death rates are varying with the age
 - (ii) Age specific death rates are generally higher at age 0 than the other ages
 - (iii) The death rates suddenly drop for the age group 1-4 years
 - (iv) U and J shaped curves of mortality shows age specific pattern of mortality of developed and developing nations respectively

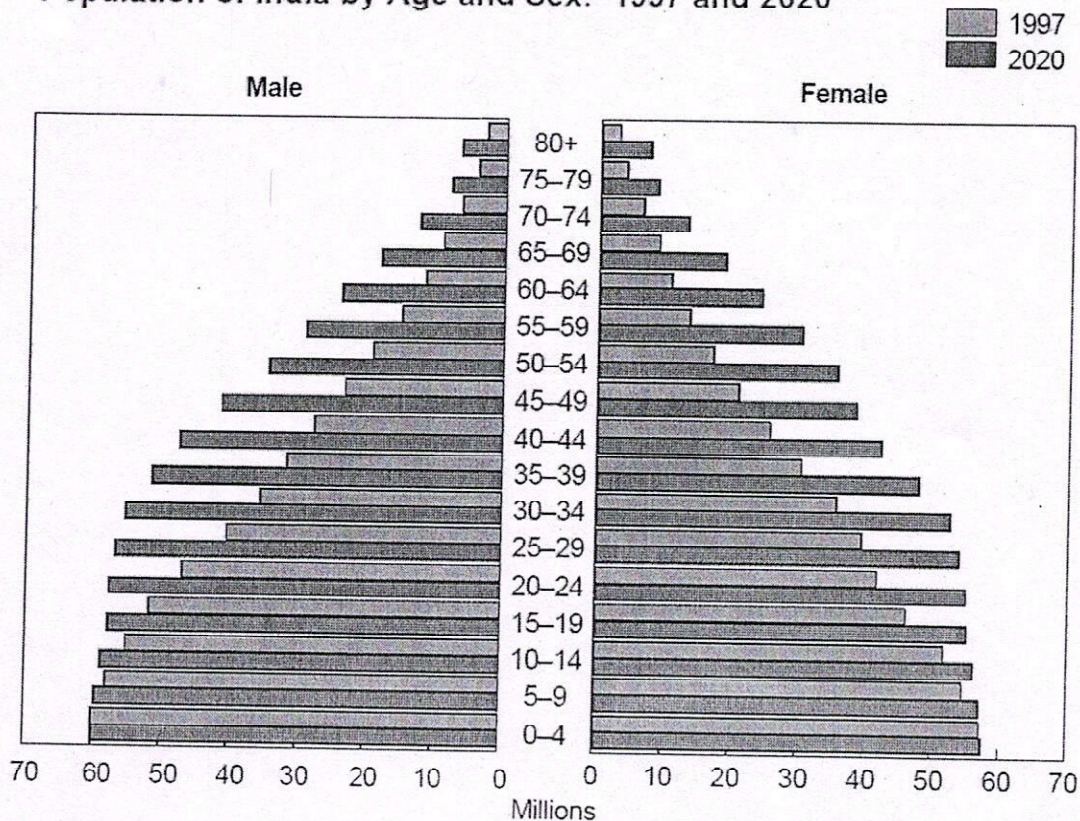
Part B**(Maximum Marks: 15)****Answer any three of the following (5 marks each).****Q2.** Calculate the missing value (for shaded areas) in different columns of the following life table:

Age group	q_x	l_x	d_x	L_x	T_x	e_x
0-1	0.00936	100000	936		7535810	75.36
1-4	0.001888	99064	187	395863	7436465	
5-9	0.001143	98877	113	494102	7040602	71.21
10-14	0.001337	98764	132	493490	6546500	66.28
15-19	0.004248	98632	419	492112	6053010	61.37
20-24	0.005539	98213	544	489705	5560898	56.62
25-29	0.006143	97669	600	486845	5071193	51.92
30-34	0.007706	97069		483475	4584349	47.23
35-39	0.009832	96321	947	479237	4100874	42.58
40-44	0.012781	95374	1219	473822	3621637	37.97
45-49	0.018947		1784	466315	3147815	33.43
50-54	0.029371	92371	2713	455072	2681500	29.03
55-59	0.045964	89658	4121	437987	2226428	24.83
60-64	0.070356	85537	6018	412639	1788441	20.91
65-69	0.102642	79519	8162	377189	1375801	17.30
70-74	0.152879	71357	10909	329512	998612	13.99
75-79	0.221066	60448	13363	268832	669100	11.07
80-84	0.325242	47085	15314	197140	400268	8.50
85-89	0.463473	31771	14725	122042	203128	6.39
90-94	0.631526	17046	10765	58317	81086	4.76
95-99	0.773285	6281	4857	19262	22768	3.62
100+	1.000000	1424	1424	3506		2.46

Q3. Briefly discuss population structure, characteristics and composition.**Q4.** Explain population balancing equation.**Q5.** What is demographic transition (DT) and discuss the different stages of DT theory?

Part C**(Maximum Marks: 30)****Answer any three of the following questions in detail (10 marks each).**

- Q6.** Discuss the dynamics of fertility and mortality during the period of 1997 and 2020 for the population given below in the age sex pyramid.

Population of India by Age and Sex: 1997 and 2020

- Q7.** Compute the following fertility indices by using the data given below in the table. CBR, GFR, TFR, GRR, NRR and discuss the results.

Age-group	Females	NO OF BIRTHS	Lx/L0
15-19	60061	1099	3.63207
20-24	66364	8787	3.51543
25-29	67869	8531	3.38115
30-34	56240	2840	3.23525
35-39	51320	729	3.07872
40-44	38474	54	2.91388
45-49	37566	11	2.73969

Sex ratio at birth is 105 males per 100 females and total population is 1340656.

- Q8.** Define urbanisation? Discuss how rapid urbanization has emerged as one of the challenges before health care providers.
- Q9.** What are the sources of demographic data? Discuss the concept of migration and reasons for migration.