SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)
(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai — 600 044.
B.Sc.(Statistics) - END SEMESTER EXAMINATIONS APRIL-2023
SEMESTER - VI
20USTCT6015 - Demography

Total Duration : 2 Hrs 30 Mins.   Total Marks : 60

Section B

Answer any **SIX** questions $(6 \times 5 = 30$ Marks$)$

1. Describe the geometric growth curve.

2. Explain force of mortality and show that $\mu_{x+\frac{1}{2}} = m_x$.

3. Compute (i) the general fertility rate
   (ii) the total fertility rate from the data given below:

Age group of childbearing females	15 -19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49
Number of women ('000)	16.0	16.4	15.8	15.2	14.8	15.0	14.5
Total births	260	2244	1894	1320	916	280	145

4. List out the uses of the life table.

5. Explain the neonatal mortality rate.

6. The number of deaths recorded in various age groups in two areas, viz., Area I and Area II, and the population size in each age group are given in the following table:

Age Group (years)	I		II	
	Population	No. of Deaths	Population	No. of Deaths
0 -10	3000	55	7500	300
10 -25	4500	30	6000	50
25 − 45	6000	40	8000	40
45 and over	1000	15	2000	64

Compute age-specific death rates of Area I and Area II.

7. Describe cohort fertility.

8. Distinguish between intercensal estimates and postcensal estimates.

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Section C

Answer any **THREE** questions $(3 \times 10 = 30$ Marks$)$

9. Explain the population pyramid.

10. Compute the crude and standardized death rates of the two populations A and B, regarding A as the standard population, from the following data:

Age Group (years)	A Population	A Deaths	B Population	B Deaths
Under 10	20000	600	12000	372
10 − 20	12000	240	30000	660
20 − 40	50000	1250	62000	1612
40 − 60	30000	1050	15000	525
Above 60	10000	500	3000	180

11. Fill up the question marks in a portion of the life table given below:

Age in years	l_x	d_x	p_x	q_x	L_x	T_x	e_x^0
4	95,000	500	?	?	?	4,850,300	?
5	?	400	?	?	?	?	?

12. Compute the gross reproduction rate and net reproduction rate from the following data:

Age-group	Number of children born to 1,000 women passing through the age group	Mortality rate (per 1000)
16 − 20	150	120
21 − 25	1500	180
26 − 30	2000	150
31 − 35	800	200
36 − 40	500	220
41 − 45	200	230
46 − 50	100	250

The sex ratio is males: females::52:48.

13. Compare the logistic curve and Gompertz curve.

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