

6. Write short notes on any *three* of the following :

- (i) Stable Population
(ii) Uses of Life Table
(iii) Census method of collecting data
(iv) Dependency Ratio. 3×5

7. (a) Infant mortality Rate (IMR) is not a probability rate.
Explain.
(b) What do you mean by rate and ratio of vital events ?
(c) Explain Age Specific Death Rate (ASDR). Write its
demerits. 3×5

This question paper contains 4 printed pages]

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S. No. of Question Paper : 7187

Unique Paper Code : 62377502 J

Name of the Paper : Demography

Name of the Course : B.A. (Prog.) Statistics : DSE 1/2

Semester : V

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any *five* questions.

Use of simple calculator is allowed.

1. (a) Describe the Crude Rate of Natural Increase and Pearl's Vital Index, giving their relative merits and demerits.
(b) Calculate the General Fertility Rate, Total Fertility Rate and the Gross Reproduction Rate for the following data, assuming that for every 100 girls 106 boys are born : 6,9

Age of women	Number of women	Age-SFR (per 1000)
15—19	212619	98.0
20—24	198732	169.6

25—29	162800	158.2
30—34	145362	139.7
35—39	128109	98.6
40—44	106211	42.8
45—49	86753	16.9

2. (a) Describe Myer's Index for the measurement of age accuracy in evaluation of age data.
- (b) Explain the different errors occurred in collecting demographic data. 7,8
3. (a) Explain the different columns of Life Table along with their relation and prove that :

$$e_x = \frac{l_{x+1} + l_{x+2} + \dots}{l_x}$$

- (b) Given that the complete expectation of life at ages 30 and 31 for a particular group are respectively 21.39 and 20.91 years and that the number living at age 30 is 41176. Find (i) the number that attains the age 31 and (ii) the number that will die without attaining the age 31. 9,6

4. (a) Explain Direct and Indirect method of standardisation of death rate.
- (b) Find the standardised death rate by Indirect method for the following data : 9,6

Age	Standard Population		Population A	
	Population (in '000)	Specific Death Rate	Population (in '000)	Specific Death Rate
0—5	18	60	22	58
5—15	20	25	23	24
15—50	37	20	25	19
50 and above	15	70	20	69

5. In usual notations prove that (any three) :

(i) $q_x = \frac{2m_x}{2 + m_x}$

(ii) $e_x^0 = T_x / l_x$

(iii) $l_x = \sum_{r=x}^{w-1} d_r$, where $l_w = 0$

(iv) $L_x = l_{x+1/2}$

3×5