

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 9279

J

Unique Paper Code : 2373012005

Name of the Paper : Demography - DSE

Name of the Course : **B.Sc. (Hons.) Statistics (NEP-UGCF)**

Semester : IV

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **five** questions.
3. **All** questions carry equal marks.

1. (a) Describe major sources of demographic data collection with merits and demerits.

(b) (i) Discuss the use of a balancing equation to check the adequacy of census data and hence obtain the error of coverage,
(ii) Distinguish between arithmetic population density and physiological population density. (9,9)
2. (a) What is tendentious bias? Discuss a method that measures the tendentious bias in the accuracy of the census age returns by age groups and sex.

(b) Describe two methods of adjusting age data in adult ages assuming that age statistics are tabulated by 5-year age group up to age 85. (10,8)
3. (a) Describe Myer's index. Derive the value of Myer's index if there is age heaping at one digit?

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- (b) (i) Define age dependency ratio in terms of child dependency ratio and old-age dependency ratio.
- (ii) Describe a method of adjusting age data at younger age groups. (10,8)
4. What is the significance of an abridged life table? Explain the various columns of an abridged life table. Describe Greville's Method for the construction of an abridged life table. (18)
5. (a) What is meant by mathematical method for population estimation and projection? How is it different from the component method?
- (b) Define the Logistic curve. Describe Pearl and Reed method for fitting a logistic curve to population data. (8,10)
6. Discuss Makeham's and Gompertz formula for graduation of mortality rates with underlying assumptions. Also, describe the method of partial sums for fitting the Makeham's formula. (18)
7. Write notes on the following :
- (a) Components of demographic data
- (b) Stable and stationary population
- (c) Aging of Population (6,6,6)