



**WEST BENGAL STATE UNIVERSITY**  
B.Sc. Honours 6th Semester Examination, 2022

**STSADSE04T-STATISTICS (DSE3/4)**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.  
Candidates should answer in their own words and adhere to the word limit as practicable.  
All symbols are of usual significance.*

**Answer any four of the following questions**

5×4 = 20

1. Present a scenario where you prefer rate over ratio to measure the variable of your interest. Define IMR and discuss whether it is a proper rate. 2+3
2. Discuss the limitations of CDR to compare mortality situations of two specified populations. Also describe a 'direct standardization' method in this context. 2+3
3. Define ASFR and therefore, write down the definition of TFR. Obtain TFR for a age-interval data. Why will you prefer TFR to measure mortality over the other existing measures? 2+2+1
4. (a) Distinguish between stable and stationary populations. 2+3  
(b) What is GRR? How is it different than NRR?
5. Write down the following in the context of Life Table: 3+2  
(a) Difference between the  $l_x$  and  $L_x$  for any age  $x$  l.b.d.  
(b) Life expectancy.
6. (a) Distinguish between 'population estimates' and 'population projections'. 2+3  
(b) Briefly describe the 'component method' of population projection.

**Answer any two of the following questions**

10×2 = 20

7. (a) How data from vital registration system is used in Life Table? Explain in detail. 6+2+2  
(b) Considering the usual notation in Life Table, write down the required formula to calculate the chance of death in between age 60 to 65 years for a person currently at age 32 years.  
(c) Distinguish between complete and abridged life table.

8. (a) What do you mean by 'force of mortality'? 2+8  
(b) Starting from the suitable assumptions, derive a reasonably good model for population projection.
9. Define the following for a specified population during a specified time interval: 2×5 = 10  
(a) Specific Death Rate  
(b) Maternal Mortality Rate  
(c) Life Expectancy  
(d) Sensitivity of IMR and  
(e) Morbidity Incidence Rate.

**N.B. :** *Students have to complete submission of their Answer Scripts through E-mail / Whatsapp to their own respective colleges on the same day / date of examination within 1 hour after end of exam. University / College authorities will not be held responsible for wrong submission (at in proper address). Students are strongly advised not to submit multiple copies of the same answer script.*

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