



**2020/TDC(CBCS)/ODD/SEM/
STSDSE-502T/120**

**TDC (CBCS) Odd Semester Exam., 2020
held in March, 2021**

**STATISTICS
(5th Semester)**

Course No. : STSDSE-502T

(Demography and Vital Statistics)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

SECTION—A

Answer any *fifteen* of the following as directed :

1×15=15

1. Name two sources of demographic data.
2. If the birthrate is greater than the death rate,
then the population will _____.

(Fill in the blank)



(2)

3. Mention the names of any two methods of obtaining vital statistics.
4. What do you mean by the word census?
5. Mention one error which occurs during collection of demographic data.
6. If sex ratio is equal to 1, then what one can say about the population?
7. Define the word rate in vital statistics.
8. Name the two measures of mortality.
9. What do you mean by the word vital event?
10. Which one is more appropriate to compare mortality rates of two populations, crude death rate or standardized death rate?
11. Infant mortality rate is defined on the children belongs to ____ age group.
(Fill in the blank)
12. Mention one drawback of census method.
13. If the age-specific fertility and mortality rates remain constant over time, then the population will be ____.
(Fill in the blank)
14. What is the purpose of using life table?

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(Continued)

(3)

15. If the population is of constant size and constant age and sex composition over time, then the population will become ____.
(Fill in the blank)
16. State whether life tables can be used to compare two or more population groups.
17. Define the word radix in a life table.
18. Name two data sources used for constructing life table.
19. What is the difference between complete and abridged life tables?
20. Define ${}_nq_x$ in the abridged life table.
21. Define crude birthrate.
22. Define general fertility rate.
23. Total fertility rate is usually defined on the women population who belongs to ____ to ____ age group.
(Fill in the blanks)
24. What is the drawback of using general fertility rate (mention any one)?

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(Turn Over)



(4)

25. Define crude rate of natural increase.
26. Define Pearl's vital index.
27. If net reproductive rate is 1, then what one can conclude about the population?
28. If $GRR < 1$, then what one can conclude about the population?
29. Mention one limitation of GRR.
30. Mention one reason, why NRR cannot be used for the population projection.

SECTION—B

Answer any five of the following questions : $2 \times 5 = 10$

31. Define the word sex ratio contexting to India.
32. What do you mean by dependency ratio?
33. Define age-specific death rate (ASDR).
34. Define infant mortality rate (IMR).
35. Define l_x and L_x of a life table.

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(Continued)

(5)

36. Define e_x^0 , complete expectation of life.
37. Define TFR.
38. Define age-specific fertility rate.
39. What do you mean by GRR contexting a population?
40. Define net reproductive rate (NRR).

SECTION—C

Answer any five questions

41. Describe the direct method of standardization of death rates of two regions (say A and B). 5
42. Describe the indirect method of standardization of mortality rates of two regions (say A and B). 5
43. Prove that $L_x = T_x - T_{x+1}$ (symbols have usual standard notations). 5
44. Prove that

$$e_x^0 = \frac{\left(\sum_{n=1}^{\infty} l_{x+n} \right)}{l_x}$$

(Symbols have usual standard notations.) 5

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(Turn Over)



(6)

45. If μ_x is the force of mortality at age x , and m_x is central mortality rate, then prove that

$$\mu_{\left(x+\frac{1}{2}\right)} = m_x$$

5

46. Prove that $GRR \geq NRR$.

5

47. Describe the columns of an abridged life table.

5

48. Prove that

$${}_nq_x^z = \frac{2n({}_n m_x^z)}{2 + n({}_n m_x^z)}$$

(Symbols have usual standard notations.)

49. Describe the assumptions which are followed during construction of a life table.

5

50. Define the crude death rate. Mention its merits and demerits.

1+4=5
