Reg. No. : ....

Name : ....

VI Semester B.Sc. Degree (CBCSS – OBE – Regular/Supplementary/Improvement) Examination, April 2023
(2019 and 2020 Admissions)
DISCIPLINE SPECIFIC ELECTIVE IN STATISTICS
6B13ASTA-Applied Statistics

Time : 3 Hours

Max. Marks : 48

PART – A
(Short Answer)

Answer **all** questions. **Each** question carries **1** mark.

1. Headquarters of field operation division of NSSO are located at _____

2. What is Vital Statistics ?

3. Define mortality.

4. What is cohort ?

5. Define rate of interest.

6. What do you mean by force of mortality ?

PART – B
(Short Essay)

Answer **any seven** questions. **Each** question carries **2** marks.

7. Write a short note on ISI, Kolkata.

8. Explain functions of CSO.

9. Describe maternal mortality rate.

10. Explain various uses of Vital Statistics.

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11. Briefly explain about Net Reproduction Rate.

12. Describe different types of Annuities.

13. Explain different laws of mortality.

14. 180,000 live births in calendar year 2023 among state residents 12,300,000 estimated population in calendar year 2023 for state residents. Calculate crude birth rate.

15. Show that $L_x = \frac{(l_x + l_{x+1})}{2}$.

PART – C
(Essay)

Answer **any four** questions. **Each** question has **4** marks.

16. Describe the role of NSSO.

17. Explain Makeham's graduation formulae.

18. Describe the structure of a complete life table.

19. From the following table, which of the following are true ? (i) $_{0.5}p_{36} = 0.091$ and (ii) $_{0.33}q_{35.5} = 0.021$.

x	35	36	37	38	39
l_x	100	99	96	92	87

20. State and explain any three characteristics of insurable risk.

21. Find the amount to which Rs. 12,000/- will accumulate after 10 years if the rate of interest is (a) 5% as the force of interest (b) 5% as the effective rate of interest.

PART – D
(Long Essay)

Answer **any two** questions. **Each** question carries **6** marks.

22. From the following data calculate TFR, GFR and ASFR.

Age (years)	Women population	Number of Births to Women
15 – 19	84790	343
20 – 24	70010	14541
25 – 29	72660	16736
30 – 34	75920	12218
35 – 39	75100	756
40 – 44	71620	82
45 – 49	66660	45

23. Explain abridged life table.

24. Calculate Net Reproduction Rate from the following data.

Age	Women Population	Survival Rate	No. of Female Birth
15 – 19	4907	0.956	101
20 – 24	4817	0.947	431
25 – 29	4441	0.937	316
30 – 34	3911	0.929	161
35 – 39	3684	0.917	68
40 – 44	3371	0.905	26
45 – 49	2911	0.890	9

25. Explain various non-life insurance contracts.