

U.G. 2nd Semester Examination - 2019**ZOOLOGY****[HONOURS]****Course Code : ZOOH/CC-T-03**

Full Marks : 40

Time : 2½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***Answer all the questions.**1. Answer any **five** of the following: $2 \times 5 = 10$

- a) Explain the Leibig's law of minimum.
- b) What do you mean by vital index?
- c) Differentiate between demographic and environmental stochasticity.
- d) What is meant by self-thinning?
- e) Write down the full form of NBSAP and NTCA.
- f) Differentiate between food chain and food web.
- g) Mention two limitations of ecological pyramids.
- h) Comment on invasive species.

[Turn over]

2. Answer any two of the following: $5 \times 2 = 10$

(a) What is a life table and what information is required to construct one? Write a note on different kinds of life table. $1+2+2=5$

b) Population growth reflects the difference between rates of birth and death— Explain the statement. Comment on age specific birth rate. $3+2=5$

(c) What is an endemic species? Mention three characteristics that might make a species more susceptible to extinction. What is meant by critically endangered species? $1+3+1=5$

d) What is bottom up control of community structure? Give a note on Simpson's diversity index. $2+3=5$

3. Answer any two of the following: $10 \times 2 = 20$

a) Explain the Lotka-Volterra equation for competition. What condition is necessary for the co-existence of two species? Differentiate between logistic and exponential models of population growth. $4+2+4=10$

(b) Define succession. Give an account of general process of succession in nature. Describe the basic types of succession. $2+3+5=10$

c) Describe the different categories of protected areas. Write a note on Project Tiger. Mention three objectives of wildlife protection act.- 1972. $4+3+3=10$

d) State the laws of thermodynamics that govern energy flow in an ecosystem. Give an account of ecological pyramids with appropriate diagram. $3+(5+2)=10$