

M.Sc.(Ag.) Examination, 2019
Semester-II
Agricultural Entomology
Course : AEN-504
(Insect Ecology)

Time : 3 Hours

Full Marks : 50

Questions are of value as indicated in the margin.

Answer **any five** questions

1. What is life table? Mention its attributes. Describe briefly the two types of life table. Justify the necessity of studying life table. 2+2+4+2=10
2. How the insect's population is governed by light? Mention the combined effect of temperature and moisture on insect's dynamics. State some limitations of population growth curve. 2+4+4=10
3. What is guild? Give an example of varied taxonomic guild. Mention the different components of an ecosystem. Describe the trophic structure of a stable aquatic ecosystem. Differentiate between natural ecosystem and agro ecosystems. 1+1+2+2+4=10
4. What do you mean by intra-specific competition? Mention its different types. Elaborate prey-predator interaction through the experiment of G.F. Gause. 2+3+5=10
5. What is migration? Mention the causes & effect of dispersal and its significance. Describe the patterns of insect dispersion. 2+4+4=10
6. What is Demography? Mention the attributes of populations. How the intrinsic growth rate 'r' is modified under limited resource? Differentiate between r-strategic and K-strategic insect. 1+3+3+3=10
7. Differentiate **any five** of the following pairs: 2×5=10
 - a) Urn and Bell shaped age pyramids
 - b) Liebig's law of minimum and Shelford's law of tolerance
 - c) Ecological niche and habitat
 - d) Random and Uniform distribution
 - e) Crude density and ecological density
 - f) Day degree and developmental threshold
 - g) S-shaped and J-shaped growth curve
 - h) Species evenness and species diversity
8. Write short notes on **any five** of the following : 2×5=10
 - a) Density independent limiting factors of insect population
 - b) Survivorship curve

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- c) Generation survival rate
 - d) Causes of pest out break
 - e) Lotka-Volterra model
 - f) Host-parasite interaction
 - g) Construct a mathematical model on logistic growth curve
 - h) Coefficient of destruction
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