

M.Sc. (Ag.) Examination, 2017

Semester-II

Plant Protection

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 expectancy of life? Mention the attributes of Life table. Describe briefly the two types of life table. Justify the necessity of studying life table. 2+2+4+2=10
 2. Mention the scope of ecology and its sub-division. How insect population is governed by temperature and humidity? 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 ecosystem. 1+1+2+2+4=10
 4. What do you mean by intra-specific competition? Mention its different types. Elaborate the prey-predator interaction through the experiment of G.F. Gause. 2+3+5=10
 5. What is migration? Mention the causes and 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 resources? 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) Triangular and Bell shaped age pyramids
 - b) Biotic potential and environmental resistance
 - 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
 8. Write short notes on **any five** of the following: 2×5=10
 - a) Survivorship curve
 - b) Lotka-Volterra model
 - c) Density independent limiting factors of insect population
 - d) Generation survival rate
 - e) Combined effect of temperature and moisture on insect
 - f) Causes of pest out break
 - g) Host-parasite interaction
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