

B.Sc. (Honours) Agriculture Semester-II Examination, 2019

Course No: AEN-121 (New)
(Fundamentals of Entomology)

Signature of Centre Superintendent

Roll No. : (in figure) _____ (in words) _____

Student Index No. _____ Regn. No. _____ of _____

Time : Two Hours

Full marks : 50

Questions are of value as indicated in the margin

Part - I
(Objective and Short Answer Type)
(Use only ball point pen)

Time : 30 minutes

Full marks : 20

- Note:** 1. Answer in question paper itself.
2. Striking, rewriting or overwriting are not allowed in the objective type questions.

1. **Fill up the blanks with most appropriate words:** 1×5=5
- a) In nature, there are two sets of interactions biotic potential and _____ resistance.
 - b) Progressive addition of abdominal segments in Prefura is known as _____.
 - c) In honey bees, lapping tongue is formed by _____ and _____.
 - d) Fringed wings present in _____ insect.
 - e) Filter Chamber is the modification of insect's _____ system.
2. **Tick (✓) the correct alternatives:** 1×5=5
- a) Pollen basket or corbicula located at Mid / Hind / Fore / All the legs of honey bee.
 - b) The second longitudinal wing vein is – Costal vein / Medial vein / Subcostal vein / Radial vein.
 - c) Antennae of male mosquito are Plumose / Pilose / Pectinate / Bipectinate in nature.
 - d) Wingless female and winged males are found in insect family Meloidae / Coccidae / Saturnidae / Aphididae.
 - e) The maximum effective temperature for insect development is 25°C / 35°C / 45 °C / 55 °C.
3. **Write short notes on the following (*any five*):** 2×5=10
- a) What are the different abdominal appendages of insect body?

b) How does small size of insect help for its dominance in this world?

c) What are the orientation of insect head?

d) Write any four modification of insect antenna.

e) What do you mean by Agro-ecosystem and its components?

f) What are the density dependent factors of environment?

g) How moths and butterflies are differentiated?

h) How the insect order Diptera is identified?

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Part - II
(Descriptive Type)

Time : 90 Minutes

Full marks : 30

Questions are of value as indicated in the margin

Answer *any three* questions from the following.

4. a) Describe briefly the structure and function of insect cuticle.
b) Enumerate the steps involved in moulting.
c) How is it controlled by hormones? 5+3+2=10
 5. Enumerate the important identifying characters of the following orders (*any two*): 5×2=10
 - a) Orthoptera
 - b) Thysanoptera
 - c) Hymenoptera
 - d) Isoptera
 6. a) Define 'Insect Ecology'.
b) How the 'Balance of Life' in nature is maintained?
c) Write in brief about 'Different causes of pest outbreak in Agro-ecosystem'. 2+3+5=10
 7. Differentiate between the following (*any five*): 2×5=10
 - a) Bug type and mosquito type of mouth parts
 - b) Tracheal Gill and Spiracular Gill
 - c) Beetles and Weevils
 - d) Caterpillar and Pseudo caterpillar
 - e) Mid gut and Hind gut
 - f) Hibernation and Aestivation
 - g) Homoptera and Heteroptera
 8. Write short notes on the following (*any four*): 2.5×4=10
 - a) Sound producing mechanism in short horned grasshopper
 - b) Tentorium
 - c) Neurosecretory cells of insect
 - d) Modification of mouth parts in housefly
 - e) Fossorial and foragial modification of leg
 - f) Hamulate and Amplexiform wing coupling mechanism
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