MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION
B.Sc. (Agri.)

Semester	**: III (Old)**	**Term**	**: I**	**Academic Year**	**: 2018-19**
Course No.	**: ENTO 231**	**Title**	**: Insect Morphology and Systematics**		
Credits	**: 3(2+1)**				
Day & Date	**: Monday, 19.11.2018**	**Time**	**: 9.00 to 12.00**	**Total Marks**	**: 80**

Note : 1. Solve **ANY EIGHT** questions from **SECTION "A".**
2. All questions from **SECTION "B"** are compulsory.
3. All questions carry equal marks.
4. Draw neat diagrams wherever necessary.

SECTION "A"

Q.1 Describe the typical insect leg with well labeled diagram. Enlist modifications of insect leg with one example each.

Q.2 Describe the female reproductive system of cockroach with well labeled diagram.

Q.3 Enlist mouth parts in insects with examples. Describe chewing and biting type of mouth parts with well labeled diagram.

Q.4 Describe typical insect antenna. Explain types of antenna with examples.

Q.5 a) Write the characters of phylum arthropoda.
b) Describe the factors responsible for insect dominance on earth.

Q.6 Define metamorphosis. Describe types of metamorphosis with suitable examples.

Q.7 Write short notes (Any Two).
a) Insect integument b) Types of larva
c) Wing coupling apparatus

Q.8 Describe digestive system of cockroach with well labeled diagram.

Q.9 a) Describe the types of pupa.
b) Write about the excretion in insects.

Q.10 Explain the nervous system of insect with well labeled diagram.

SECTION "B"

Q.11 Define the following terms.

1) Spiracle 2) Scelerite 3) Synapse 4) Species
5) Aestivation 6) Paedogenesis 7) Amphineustic 8) Hypognathus

Q.12 Answer in one sentence.
1) State the natural order of dragonfly.
2) Write the head position in red cotton bug.
3) Give exact location of Johnston's organ.
4) What is chorion?
5) What is parthenogenesis?
6) Who is the Father of biological classification?
7) Give the function of Malpighian tubules.
8) State the functions of afferent neurons.

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