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MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END EXAMINATION

B.Sc. (Agri.)

Semester : III (New)	Term : I	Academic Year : 2014-15
Course No. : ENTO 231	Title : Insect Morphology and Systematics	
Credits : 3(2+1)		
Day & Date : Tuesday, 07.10.2014	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 Enlist important characteristics of Phylum Arthropoda and differentiate between insect and mite.
- Q.2 Draw a well labeled diagram of insect integument and differentiate between cuticular appendages and processes.
- Q.3 Describe with a suitable diagram mouth parts in red cotton bug.
- Q.4 Enumerate various modes of reproduction in insects and draw a well labeled diagram of female reproductive system in cockroach.
- Q.5. a) Write in short about the excretion in insect.
b) Enlist various functions of blood in insect.
- Q.6 a) Give different types of wing modifications in insects with example.
b) Enlist various functions of antennae in insect.
- Q.7 Give significance of metamorphosis and write about the complete metamorphosis in insect.
- Q.8 State the distinguishing characteristics of Order Hymenoptera and mention any four agriculturally important families of Hymenoptera with example.
- Q.9 Write short notes on (Any Two).
1) Sound production in Orthoptera
2) Diapause in insects
3) Photoreceptors in insects
- Q.10 Give the location and function of following structures in cockroach.
1) Peritrophic membrane
2) Epicranial suture
3) Cerci
4) Trochantin

(P.T.O.)

SECTION "B"

Q.11 State True or False. Correct and rewrite the sentence if false.

- 1) Filter chamber is present in Homopterous insects.
- 2) Trehalose sugar present in insects.
- 3) Apophyses are solid cuticular invaginations.
- 4) Acetyl amine is a neurotransmitter involved in synaptic conduction of impulse.
- 5) Lipase enzyme in insect midgut converts protein into amino acids.
- 6) Tympanum is stridulatory in function.
- 7) In holopneustic type of respiratory system all the spiracles are non-functional.
- 8) Corpora allata secretes juvenile hormone in insects.

Q.12 Match the following pairs.

"A"

"B"

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|------------------------|---------------|
| 1) Maggots | a) Odonata |
| 2) Moniliform antennae | b) Coleoptera |
| 3) Prehensile organ | c) Diptera |
| 4) Aphid lion | d) Isoptera |
| 5) Snout beetles | e) Collembola |
| 6) Anamorphosis | f) Neuroptera |
| 7) Collophore | g) Hemiptera |
| 8) Cornicles | h) Protura |

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