

**ZO-554(A)****Applied Entomology****M. Sc. Zoology (MSCZO-12)****Second Year, Examination, 2017****Time : 3 Hours****Max. Marks : 80**

**Note :** This paper is of **eighty (80)** marks containing **three (03)** Sections A, B and C. Learners are required to attempt the questions contained in these Sections according to the detailed instructions given therein.

**Section-A****(Long Answer Type Questions)**

**Note :** Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer *two* (02) questions only.

1. Give an outline classification of class Insecta upto orders only giving examples from each order.
2. Describe Integrated Pest management with various steps involved in its implementation.
3. Write an essay on Beneficial insects.
4. Write notes on any *two* of the following :
  - (a) Insects injurious to livestock
  - (b) Biological control
  - (c) Zooparasitic and Phytoparasitic mites



**Section-B****(Short Answer Type Questions)**

**Note :** Section 'B' contains eight (08) short answer type questions of eight (08) marks each. Learners are required to answer *four* (04) questions only.

1. Describe various types of insect legs.
2. Describe the anatomy of alimentary canal of insects.
3. Give an account on tracheal system of insects.
4. Describe the male and female reproductive system of insects.
5. Write an essay on forensic entomology.
6. Describe endocrine glands and their function in insects.
7. Write an essay on apiculture and give the scientific and common names of any *four* species of honeybees.
8. Discuss biological control in insects with its scope in India.

**Section-C****(Objective Type Questions)**

**Note :** Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this Section are compulsory.

1. Which of the following is not an apterygote insect ?
  - (a) Bristle tails
  - (b) Spring tails
  - (c) Bedbug
  - (d) Silverfish



2. Members of the family Eletaridae are commonly known as :
  - (a) Click beetles
  - (b) Dung beetles
  - (c) Leaf beetles
  - (d) Tiger beetles
3. Mayflies belong to the order :
  - (a) Diptera
  - (b) Ephemeroptera
  - (c) Odonata
  - (d) Coleoptera
4. Natatorial legs in insects are adapted for :
  - (a) Clinging
  - (b) Running
  - (c) Swimming
  - (d) Digging
5. In insects alary muscles are associated with :
  - (a) Heart
  - (b) Legs
  - (c) Wings
  - (d) Gut
6. Laevae of beetles are called :
  - (a) Catterpillars
  - (b) Nymphs
  - (c) Maggots
  - (d) Grubs



7. Which hormone is responsible for moulting in insects ?
  - (a) Bursicon
  - (b) Ecdysone
  - (c) Juvenile
  - (d) None of these
8. Which of the following is a predatory family of beetles ?
  - (a) Coccinellidae
  - (b) Scarabaeidae
  - (c) Chrysomelidae
  - (d) Cerambycidae
9. Which of the following is called 'Lac State of India' ?
  - (a) Meghalaya
  - (b) Chhattisgarh
  - (c) Uttarakhand
  - (d) Jharkhand
10. Headquarter of Zoological Survey of India is located at :
  - (a) Mumbai
  - (b) New Delhi
  - (c) Kolkata
  - (d) Chennai