PG/IIS/ZOO-201/13

M.Sc. 2nd Semester Examination, 2013

ZOOLOGY

PAPER—ZOO-201 (A+B)

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

GROUP—A

(*Entomology*)

1. Answer *two* of the following : 2 × 2

(*a*) Mention different attributes which have helped insects to become the most abundant group of animals in the world.

(*b*) With a labelled diagram point out different sutures on insect's head.

(*c*) What is peritrophic membrane ? Mention its function.

(*d*) Write the relationship of economic threshold level and economic injury level.

2. Answer *two* of the following : 4 × 2

(*a*) Briefly describe different parts of insects' integument with figure.

(*b*) Explain the merits and demerits of biological control.

(*c*) Give a comparative account of different apterygota insects' orders.

(*d*) Add a note on the evolutionary significance of wings and their modifications in insects.

3. Answer *one* of the following : 8 × 1

(*a*) Why midgut is considered as the most sensitive part of insects' digestive system ? Highlight the structure and function of 'Filter-Chamber' and 'Peritrophic Membrane'. 8

(*b*) Discuss the role of pheromones in reproduction of insects. Write the function of JH and ecdysone. 5 + 3

GROUP – B

(*Ecology*)

4. Answer *two* of the following : 2 × 2

(*a*) Differentiate between Ecosystem and Biome.

(*b*) What is edge effect ?

(*c*) Differentiate '*r*' and '*k*' strategies of reproduction.

(*d*) Differentiate between eurycoeius and stenocoeius species.

5. Answer *two* of the following : 4 × 2

(*a*) Explain the difference Species Diversity Indices and Species Dominance Indices.

(*b*) Elaborate the concept of Linkage density and connectance of food web.

(*c*) Highlight the relationship among taxon, guild and community.

(*d*) Differentiate between organismic and individualistic concepts of community.

6. Answer *one* of the following : 8 × 1

(*a*) Explain ecosystem functioning in the light of Laws of thermodynamics. Elaborate resistance stability and resilience stability.

(*b*) Briefly discuss the evolution of 'Ecological Niche' concept. Differentiate fundamental niche from trophic niche. Explain 'Competition Exclusion Principle' with experimental evidence.