2013

M.Sc. Part–II Examination

ZOOLOGY

PAPER—VII (Group—A)

Full Marks : 50

Time : 2 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers wherever necessary.

Write the Answers to Questions of each Unit in separate Booklet.

Answer any *four* questions taking *two* from each unit.

Unit—I

[Principle of Instrumentation and Computer application of Biology]

1. Answer the following questions : $2\frac{1}{2} \times 5$

(a) Define the R_f – value with an example.

(b) Why 'salt-gradient' is used in ion-exchange Chromatography ?

(c) How do you demonstrate the amino-acids in TLC–Plate ?

(d) State the physical anatomy of a gel-filtration column and mention its use in science.

(e) State the role of ligand materials in affinity chromatography.

2. (a) What is native PAGE ? Discuss, in brief, the steps of SDS–PDGE. Mention its biological applications.

(b) (i) Write the principle of centrifugation.

(ii) Write a note on 'sucrose gradient centrifugation'.

$(1+5+1)+3+2\frac{1}{2}$

3. (a) Distinguish between high level and low level programming language with examples. 3

(b) State the basic functions of operating system. 4

(c) Write down the characteristics of Modem with diagram.

$2\frac{1}{2}$

(d) Differentiate between workstation and Microcomputers. 3

4. (a) What is hexadecimal number system ? How a hexadecimal number can be converted into its equivalent binary number ?

(b) How a chart can be formed in MS. Excel ?

(c) State the components of bioinformatics.

(d) Distinguish between Primary Nuclic acid and Protein sequence data bases.

$(2+2)+4+2+2\frac{1}{2}$

Unit—II

[Parasitology]

5. (a) What is the distinctive feature of Schistosoma ? Mention the name of larval stages through which it completes its life cycle.

(b) Describe the structural features of the *first* and *last* larval stage of this parasite with labelled diagram.

$1+1+5+5\frac{1}{2}$

6. (a) Write the name and function of the proteins found in trophozoite of Giarelia. Discuss briefly the life cycle, Pathogenicity and Prophylaris of *Giarelia* sp.

(b) What is Phoresis ? Give example.

$1\frac{1}{2}+5\frac{1}{2}+2+2+1\frac{1}{2}$

7. (a) Enumerate the structure and Chemical composition of Nematode tegument.

   (b) Define reservoir host with example.

   (c) Add a note on Glycocalyx.

   (d) Distinguish between micro filaria of Wuchereria and Brugia.

$6\frac{1}{2}+2+2+2$

8. (a) Discuss the factors involving the parasite in relation to epidemiology of filaria.

   (b) Explain how induction of immunity develops through antigen in Visceral Leishmaniasis.

   (c) Describe the mechanism of T-Cell immunity in malaria.

$6+3\frac{1}{2}+3$
