

2017

M.Sc. Part-II Examination

ZOOLOGY

PAPER—VII

Full Marks : 100

Time : 4 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.

Use separate Answer-scripts for each group.

Group—A

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

Unit—I

[Principle of Instrumentation and Computer application of Biology]

1. (a) Write the principle of Gel-electrophoresis.
(b) Describe briefly the steps of SDS-PAGE. Mention its biological application.

(Turn Over)

- (c) What is native PAGE ?
 (d) Write notes of moving boundary electrophoresis.

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

2. (a) What is ascending and descending paper Chromotography ?
 (b) Differentiate between paper Chromatography and gel filtration Chromatography.
 (c) What is density gradient centrifugation ? State its application.
 (d) What is sedimentation co-efficient ?

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

3. (a) What do you mean by RAM and ROM ?
 (b) Describe in brief, the features of different types of ROM.
 (c) What is language processor ?
 (d) State the difference between low level and high level language.
 (e) What is Op code ?

$$3+4+2+2+1\frac{1}{2}$$

4. (a) What do you mean by bioinformatics ? How bioinformatics can be used in preserving biodiversity ?
 (b) What are the features of biological database ?
 (c) What do you understand by binary and hexadecimal number system ?
 (d) Convert the binary number 11011 to its decimal equivalent.

$$4+3\frac{1}{2}+3+2$$

Unit—II

[Parasitology]

5. (a) What do you mean by paratenic host ? Give example.
 (b) Mention the characteristic features of the genus *schistosoma* which make different from other trematodes. Describe briefly life cycle stages of any one species with labelled diagram.
6. Distinguish between (three) :
- (a) (i) Cyclopropagative and cyclodevelopment transmission.
 (ii) Obligatory and facultative parasites.

$$2+(2+8\frac{1}{2})$$

(iii) VAT and VSG.

(iv) Relapses and Reinfection. 3×3

(b) What is Glycocalyx? Mention its functions. 2½

(c) What is Papatasi fever? 1

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

(b) Draw a labelled diagram of the trophozoite of *Giardia* sp. Mention the function of Axostyle, Adhesive disc and Median bodies. 7½+(2+1½)+1½

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

(b) Describe the mechanism of T-cell immunity in malaria.

(c) How can you measure the endemicity of malaria?

(d) What are stable and unstable malaria?

3+3+3+3½