

M.Sc.

2015

2nd Semester Examination

ZOOLOGY

PAPER—ZOO-204

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

Answer all questions of the following.

Group — A

(Parasitology)

1. Answer any *two* questions of the following : 2×2
 - (a) Distinguish between Commensalism and Mutualism with example.
 - (b) What is CS Protein? Mention its functions.

(Turn Over)

- (c) Draw the Cyton and mention its functions.
- (d) (i) Mention the unique features of blood fluke which make them different from other trematode.
- (ii) What is the causative organism of PKDL? Mention any pathogenecity it shows. 1+1

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

- (a) How microfilaria (mf) of Wuchereria differs from that of Brugia? Draw these microfilaria.
- (b) Give an account of the ultra-structural features of the Nematode tegument.
- (c) Write short notes on VSG gene. Mention its significance in trypanosomiasis.
- (d) Give an account of Bionomics and control measures of Sand fly.

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

- (a) Describe briefly the life cycle of *Balantidium* sp. Mention its pathogenesis and Prophylaxis. 5+2+1
- (b) (i) Enumerate briefly the host and environmental factors in epidemiology of Kala-azar.
- (ii) Discuss briefly different types of defence mechanisms of hosts against parasitic infections. 5+3

Group — B**(Biotechnology)**

4. Answer any *two* questions of the following.: 2×2
- (a) Name two restriction enzymes (one 6bp, one 4bp recognition sequences) with their sources and recognition sequence and position of cut.
 - (b) What are the advantages of micro-biosensors over other biosensors?
 - (c) Write the two disadvantages of bacterial artificial chromosome vector.
 - (d) Write four characteristics of an ideal biomarker.
5. Answer any *two* questions of the following : 4×2
- (a) What are the features of Yeast Artificial Chromosome?
 - (b) How biosensors are classified according to their biological elements?
 - (c) Discuss about the factors upon which biodegradation depends.
 - (d) Explain the underlying scientific principles for the integration of different rural biotechnology.

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

(a) What is bioremediation? Briefly describe different types of Phytoremediation process. Mention the advantages and disadvantages of *Ex-situ* bioremediation. 2+4+2

(b) (i) Describe the characteristic features of p Bluescript II cloning vector with a suitable diagram. .

(ii) What is meant by blue - white screening?

5+3