

**M.Sc. 2nd Semester Examination, 2023**

**ZOOLOGY**

PAPER – ZOO-203.1 & 203.2

*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*

**Paper : ZOO-203.1**

*(Molecular Biology)*

1. Answer any *two* questions from the following :  $2 \times 2$

(a) Differentiate miRNA from SiRNA.

(b) What is cryptogenes and where are they found ?

*( Turn Over )*

- (c) What are Okazaki fragments ? Name the enzymes which removes RNA from Okazaki fragments during lagging strand DNA synthesis of *E.coli*.
- (d) Write the localization and functions of different RNA polymerases present in eukaryotic cells.

2. Answer any *two* questions from the following :  $4 \times 2$

- (a) How loaded helicases are activated during DNA replication in eukaryotic chromosome ? 4
- (b) How *E.coli* DNA replication is regulated by Dna A, ATP levels and Seq A ? 4
- (c) How bacterial transcription terminates by Rho dependent and Rho independent mechanism. 2 + 2
- (d) What are codons ? Describe the formation of peptide bonds and ribosome translocation in the elongation phase of translation. 1 + 3

3. Answer any *one* question from the following :  $8 \times 1$

- (a) Explain the role of RNAi machinery in heterochromatin formation and gene silencing. 8
- (b) What is capping ? How capping and polyadenylation occurs in eukaryotic mRNA ? Mention the roles of 5' cap and 3' poly a tail of eukaryotic mRNA. 1 + 5 + 2

**Paper : ZOO-203.2**

*(Parasitology)*

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

- (a) What do you mean by hyperparasite and phoresis ? Give example.
- (b) Define the following :
- (i) Filarial endemicity rate
  - (ii) Microfilaria rate
  - (iii) Infected and Infective vector.

- (c) What is glycocalyx ? Mention its functions.
- (d) What do you mean by relapse and recrudescence in malaria ?

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

(a) Write the name and functions of the glands found in the cercariae of blood fluke. 4

(b) Enumerate the structure and composition of cestode tegument with labelled diagram. 4

(c) (i) Distinguish between classical and occult filariasis.

(ii) What is Schistosomule ? 4

(d) State the morphological features of Tick.  
Comment on its control measure.  $2\frac{1}{2} + 1\frac{1}{2}$

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

(a) Describe the life cycle, pathogenecity and prophylaxis of *Paragonimus westermani*.  
5 + 2 + 1

- (b) (i) Describe the morphology of *Balantidium Coli* (Trophozoite) with labelled diagram.
- (ii) Write notes on clinical features of Kala-azar,
- (iii) State the hypotheses regarding periodicity of microfilariae (mf.). 4 + 2 + 2
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