

2012

ZOOLOGY (Optional)

प्राणिशास्त्र (वैकल्पिक)

100302

Time : 3 hours

Maximum Marks : 200

Note :

- (i) Answers must be written in English only.
- (ii) Question No. 1 is compulsory. Of the remaining questions, attempt **any Four** selecting one question from each section.
- (iii) Figure to the **RIGHT** indicates marks of the respective question.
- (iv) Number of optional questions upto the prescribed number in the order in which they have been solved will only be assessed. Excess answers will not be assessed.
- (v) Credit will be given for orderly, concise and effective writing.
- (vi) Illustrate your answers with suitable diagrams wherever necessary.
- (vii) Candidates should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise they will be penalised.

1. Answer **any four** of the following : 40
 - (a) What is correlation ? Describe various methods employed in study of correlation with example.
 - (b) Describe polymerase chain reaction (PCR) and add a note on its applications.
 - (c) Give an account of the endocrine control of female reproduction.
 - (d) Explain the asexual and sexual modes of reproduction in protozoa.
 - (e) Write a note on Genome information.

SECTION - A

2. Answer the following sub-questions :
 - (a) Explain the structure and functions of Golgi apparatus. 20
 - (b) Describe the construction of linkage maps. 20
3. Answer the following sub-questions :
 - (a) Write a note on cell mediated immunity. 20
 - (b) What is mutagenesis ? Describe the mechanism of mutagenesis. 20

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SECTION - B

4. Answer the following sub-questions :
- (a) Explain the Dipolar nature of water molecule with its significance. 20
 - (b) What is DNA replication ? Describe the chemistry of DNA replication. 20
5. Answer the following sub-questions :
- (a) Describe the structure and biological importance of glycogen. 20
 - (b) Explain the initiation of translation in prokaryotes. 20

SECTION - C

6. Answer the following sub-questions :
- (a) Describe sliding filament theory of muscle contraction in vertebrates. 10
 - (b) Explain the process of spermatogenesis. 15
 - (c) Write an account of the disease Trypanosomiasis. 15
7. Answer the following sub-questions :
- (a) Explain the role of liver in the process of digestion in vertebrates. 10
 - (b) Describe the development of frog embryo up to gastrulation. 15
 - (c) Give economic importance of fresh water fishery. 15

SECTION - D

8. Answer the following sub-questions :
- (a) Describe the types of scales in fishes. 10
 - (b) Write on biological nomenclature of species. 10
 - (c) With the help of a diagram, explain carbon cycle in nature. 20
9. Answer the following sub-questions :
- (a) Write a note on flying adaptations in birds. 10
 - (b) Explain the classification of biota on the basis of five kingdoms. 10
 - (c) Write an account of the significance of biodiversity and its preservation. 20