QTF

2009

ZOOLOGY - II (Optional)

100092

Standard : Degree **Total Marks : 200**

Nature : Conventional **Duration : 3 Hours**

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) *Figures to the **RIGHT** indicate 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) *Neat line drawings are expected wherever necessary.*

(vii) *Candidate should not write roll number, any name (including their own), signature, address or any indication of their identity anywhere inside the answer book otherwise he/she will be penalised.*

(viii) *For each slab of 10, 15 and 20 marks, the examinee is expected to write answers in 125, 175 and 250 words respectively.*

1. Answer ***any Four*** of the following questions :

(a) Explain the structure and function of Golgi bodies. **10**

(b) What is cloning ? Describe cloning techniques using vectors and their success rate. **10**

(c) What is AIDS ? Briefly explain causes and remedies for AIDS. **10**

(d) Write notes on pearl culture and its importance in Indian economy. **10**

(e) Give an account of various stem cells and their application in alleviating human suffering. **10**

SECTION - A

2. Answer the following sub-questions :

(a) Describe briefly Meiosis I and explain its significance. **10**

(b) Explain the structure of lamp brush chromosome and add a note on its significance. **10**

(c) Describe the structure of BDNA justifying it's helical structure. **10**

(d) Write notes on Wobble hypothesis. **10**

P.T.O.

Marks

3. Answer the following sub-questions :
   (a) Elucidate on the molecular changes occuring during cell cycle. **10**
   (b) With reference to chromosome morphology explain karyotype and idiogram. **10**
   (c) Describe clover leaf model of tRNA. **10**
   (d) Explain the structure and role of mRNA polymerase of prokaryotes. **10**

SECTION - B

4. Answer the following sub-questions :
   (a) Write notes on multiple alleles with three examples. **15**
   (b) Give a detailed account of DNA finger printing technique and its application. **10**
   (c) Role of bioinformatics in pharmaceutical industries. **15**

5. Answer the following sub-questions :
   (a) Give an account of any three human syndromes caused by non dysjunction. **15**
   (b) Explain the principle and applications of SDS - PAGE separation technique. **10**
   (c) Write notes on application of bioinformatics in phylogenetic analysis. **15**

SECTION - C

6. Answer the following sub-questions :
   (a) What is oxidative phosphorylation ? Describe electron transport chain and its relation to oxidative phosphorylation. **15**
   (b) Derive Michaelis Menten equation in relation to enzyme catalysed reactions. **15**
   (c) Write notes on preparation and application of monoclonal antibodies. **10**

7. Answer the following sub-questions :
   (a) Give an account of protein structure with bonds. **15**
   (b) Describe briefly the sources and functions of Vit A and Vit B_2. **15**
   (c) Elucidate on principle and applications of ELISA. **10**

SECTION - D

8. Answer the following sub-questions :
   (a) Write notes on different types of eggs. **10**
   (b) Explain the concept of organizer and embryonic induction during morphogenesis. **10**
   (c) Explain embryo transfer techniques and concept of test tube baby. **10**
   (d) What is senility ? Describe the latest concept of arresting or prolonging aging. Add a note on longevity in some races of mankind. **10**

Marks

9. Answer the following sub-questions :

(a) Describe the mechanism of spermatogenesis and add a note on aspermatogenesis. **10**

(b) What is placentation ? Describe different types of placenta and their role. **10**

(c) Elucidate on the latest concepts of male contraception and its success in India. **10**

(d) What is teratogenicity ? Highlight upon teratogenesis in man with examples. **10**

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