

1.F.S-2009

Sl. No. 16215

B-JGT-J-APB

## ZOOLOGY

### Paper II

Time Allowed : Three Hours

Maximum Marks : 200

#### INSTRUCTIONS

*Candidates should attempt questions 1 and 5 which are compulsory, and any THREE of the remaining questions selecting at least ONE question from each SECTION.*

*The marks carried by each question are indicated at the end of every question.*

*Answers must be written in ENGLISH.*

*Neat sketches may be drawn, wherever required.*

#### SECTION - A

1. Highlight the differences between any *four* of the following (each answer may be in about 150 words) :  $4 \times 10 = 40$ 
  - (a) Endocytosis and Exocytosis.
  - (b) Genomics and proteomics.
  - (c) Random genetic drift and gene frequency.
  - (d) Molecular probes and traditional classification of animals.
  - (e) Transgenics and clones.

(Contd.)

2. Define "Lysosomes". Enlist their enzymes. Discuss disposition, structure, functions and significance of Lysosomes. 5+10+25=40
  
3. Explain the technique of DNA-finger printing and comment on its usefulness, especially in forensic sciences. 40
  
4. Give an account of the molecular basis of evolution focussing attention on Proteins. Draw one evolutionary tree in support of your answer. 30+10=40

### SECTION – B

5. Comment on the differences between any *four* of the following (each answer may be in about **150** words) : 4×10=40
  - (a) Amnion and chorion-type of placenta.
  - (b) Juvenile hormones and moulting hormones.
  - (c) Hyperplasia and hypertrophy.
  - (d) Metamorphosis and ecdysis.
  - (e) IVF and surrogate mothers.

6. Give an account of lipid biosynthesis and  $\beta$ -oxidation giving chemical equations. 20+20=40
  
  7. Discuss the factors affecting  $O_2$ -dissociation curves. Give examples and draw appropriate diagrams. 30+10=40
  
  8. Summarise the salient features of thermoregulation and osmoregulation in organisms. Give examples in each case. 20+20=40
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