I.F.S-2009

No. 015925

B-JGT-J-APA

ZOOLOGY

Paper I

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 number of marks carried by each question is indicated at the end of the question.

Answers must be written in ENGLISH.

Suitable diagrams may be drawn, wherever required.

SECTION A

1. Write briefly on any ***four*** of the following in not more than 150 words each :

(a) Polymorphism in Cnidarians *10*

(b) Parasitic adaptation of *Ascaris* *10*

(c) Shell diversity in Mollusca *10*

(d) Aortic arches of tetrapods *10*

(e) Types of reptilian skull *10*

2. (a) Write an account on the affinities and systematic status of Hemichordata. *20*

(b) Describe the canal systems in sponges. *20*

3. (a) Give an account on the general features and life history of *Asterias*. *20*

(b) Describe the general features and life history of *Fasciola*, and its relation to man. *20*

4. (a) Write elaborately on the flight adaptation(s) in birds. *20*

(b) What is paedomorphosis ? Write an account on the paedogenesis in Amphibia. *20*

SECTION B

5. Write notes on any ***four*** of the following in not more than 150 words each :

   (a) Social behaviour in primates *10*

   (b) The role of pheromones in alarm spreading *10*

   (c) Geiger – Muller counter *10*

   (d) Flame photometry *10*

   (e) Students' t-distribution *10*

6. Outline the world distribution of the Tropical Rain Forest (TRF) biome. Describe physico-biological characteristics and the fauna associated with the TRF biome. *40*

7. (a) What are the characteristics of 'instinct' and 'learning' ? Describe in detail various types of learning, with suitable examples. *20*

   (b) Give an account on the world distribution, sources of infestation, life history and damage caused by *Sitophilus oryzae*. Suggest some measures for its prevention and control. *20*

8. (a) Describe regression and its various models. Add explanatory notes on properties, assumptions and computations for simple linear regression using biological data. *20*

(b) Discuss the theoretical basis of spectrophotometry with reference to the Beer – Lambert Law. Write an account on the construction and applications of a spectrophotometer. *20*