

2013

ZOOLOGY

(Major)

Paper : 3.3

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

*Candidates **eligible** for Internal Assessment shall
answer from PART—I only (Marks : 90)*

*Candidates **not eligible** for Internal Assessment shall
answer both from PART—I and PART—II (Marks : 100)*

PART—I

(Marks : 90)

UNIT—I

(**Biostatistics**)

(Marks : 20)

1. A genetic engineer was attempting to cross a tiger and a cheetah. He predicted a phenotypic outcome of the traits in the ratio—4 stripes : 3 spots : 9 combinations of stripes and spots. After cross, he observed the individuals as 50 with stripes, 41 with spots and 85 with combinations of both.

(2)

According to chi-square test, did he get the predicted outcome ($\chi^2_{\alpha} = 5.991$ at 2 degrees of freedom)? 20

Or

Write short notes on (any two) : 10×2=20

- (a) Use of computer in biology
- (b) Correlation and regression analysis
- (c) Sampling techniques

UNIT—II

(**Ecology**)

(Marks : 25)

2. What is population? Describe briefly the various factors that regulate population growth. 3+12=15

Or

Why is conservation of forest important? Discuss the effect of human population growth on forest destruction. 3+12=15

3. Explain how flow of energy occurs in an ecosystem. Discuss the mechanism of toxicant action. 5+5=10

Or

Write short notes on (any two) : 5×2=10

- (a) Factors affecting species diversity
- (b) Food web
- (c) Thermoregulatory mechanism
- (d) Biotic community

UNIT—III

(**Animal Behaviour**)

(Marks : 25)

4. Describe the social organisation and behaviour of honeybee. 5+10=15

Or

What is communication? What are the different modes of communication? Explain with examples, various types of visual communication in animals. 2+3+10=15

5. Discuss how motivation to feeding can be measured. Explain Lorenz's model of motivation. 5+5=10

Or

Write short notes on (any two) : 5×2=10

- (a) Conditioned reflex
- (b) Territoriality
- (c) Imprinting
- (d) Animal aggression

UNIT—IV

(**Wildlife Management and Conservation**)

(Marks : 20)

Answer *any one* question

6. Describe the social organisation and ethology of pygmy hog. 5+15=20

7. What are the different IUCN Red list categories? Give an account of endangered mammalian species of North-East India.

6+14=20

8. Write briefly on (any two) : 10×2=20

- (a) Carrying capacity
- (b) Feeding and defecating behaviour of rhino
- (c) Protective behaviour and family ties
- (d) Reproductive behaviour of golden langur

PART—II

(Marks : 10)

(In lieu of Internal Assessment)

9. Describe the important features of forest and grassland ecosystem. 5+5=10

Or

Write notes on (any two) : 5×2=10

- (a) Productivity
- (b) Biosphere reserve
- (c) Ecological succession

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