

2008

ZOOLOGY

PAPER—Z 201

Full Marks : 40

Time : 2 hours

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

GROUP—A

(*Entomology*)

1. Answer *two* questions from the following: 2×2

(a) Mention the attributes which have made insects' the most abundant group for animals in the world.

(*Turn Over*)

(b) Name different insects which are being used as human food.

(c) Comment on mosquito vectors of filarial worms.

(d) Enlist clinical manifestation of sandfly fever.

2. Answer *two* questions from the following: 4 x 2

(a) Briefly describe different parts of insects integument with figure.

(b) Highlight the relationship between juvenile hormone and ecdyson during molting and metamorphosis of insects.

(c) Discuss the role of aquatic insects in environmental monitoring.

(d) Elaborate the mechanism and functional significance of bioluminescence.

3. Answer any *one* from the following: 8 x 1

(a) Define Pheromone. Differentiate semiochemicals from allelochemicals. Briefly discuss the importance of pheromones in insects with special reference to the reproduction of social insects.

8

- (b) Justify the statement that insect-plant interaction is the result of coevolution. Briefly discuss the types and characteristics of different galls formed by insects. 3 + 5

GROUP—B

(Ethology)

4. Answer *two* of the following: 2 × 2

(a) What is FAP?

(b) What is inclusive fitness?

(c) Distinguish between filial and sexual imprinting.

(d) What is male choice?

5. Answer *two* of the following: 4 × 2

(a) Eusociality in mammals.

(b) Draw the average pay-off matrix to the attacker playing 'Hawk', 'Dove' and 'Bourgeois' strategies respectively.

(c) Limiting effect of resource on habitat selection.

(d) With the help of examples briefly describe the strategies adopted by animals to escape enemies.

6. Answer any *one*: 8 × 1

(a) What is Altruism ? Discuss K in selection in the light of Hamilton's rule. Calculate the coefficient of relationship between half siblings and between full siblings. 8

(b) Distinguish between the following (any *four*): 2 × 4

(i) Home range and territory

(ii) Wallowing and anting

(iii) Fixed action pattern and learning behaviour

(iv) Taxis and Kinesis

(v) Flight distance and Charge distance

(vi) Instrumental conditioning and Operant conditioning.