POST-GRADUATE COURSE

Term End Examination — June, 2017

ZOOLOGY

Paper - 2B : Ethology and Evolution

Time : 2 Hours   Full Marks : 50

(Weightage of Marks : 80%)

Special credit will be given for accuracy and relevance in the answer. Marks will be deducted for incorrect spelling, untidy work and illegible handwriting. The weightage for each question has been indicated in the margin.

1. Answer *two* questions : $9 \times 2 = 18$

   a) Define habituation. Describe feeding behaviour of leech with special reference to the modulatory effects of serotonin.   2 + 7

   b) State the signifance of flocking in birds.   9

   c) Define phylogeny. Describe different types of phylogenetic trees studied by you.   2 + 7

   d) What do you mean by 'restriction enzyme sites' ? Explain how the same is helpful in construction of molecular phylogeny.   2 + 7

2. Answer *three* questions : $6 \times 3 = 18$

   a) What do you mean by supernormal stimuli ? Add a note on false dichotomy.   2 + 4

   b) Enumerate the influence of hormones on reproductive behavioural sequence in Ring dove.   6

   c) State the factors associated with habitat selection.   6

   d) What do you mean by phenotypic plasticity ? Explain how an organism's reaction norm should be related to fitness.   2 + 4

   e) Write a note on evolutionary novelties.   6

   f) Elucidate with example that DNA-DNA hybridization can explain nucleic acid phylogeny.   6

3. Answer *two* questions : $4 \times 2 = 8$

   a) State haplodiploidy hypothesis. Explain why haplodiploidy does not explain eusociality.   1 + 3

b)   Explain (i) Brood parasitism and (ii) Klepto parasitism.   2 + 2

c)   Explain the phenomenon of meiotic drive. 4

d)   Describe the relationship between allopatric and sympatric speciation.   4

4.   Answer *two* questions :   3 × 2 = 6

a)   What is pride ?   3

b)   What do you mean by instinct ?   3

c)   Define neutral evolution and adaptive evolution.   3

d)   Explain the terms 'Exon' and 'Genealogy'.

$$1\frac{1}{2} + 1\frac{1}{2}$$

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