

(Theory Paper)  
Paper Code : ZOO 402(W)  
(Wildlife Ecology Special  
Conservation Biology)

Full Marks - 80

Time - Three hours

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

1. Answer the following multiple choice questions  
(all six questions are compulsory) :  $1 \times 6 = 6$
- (a) Most workers in ant colony are shows  
dimorphism (Large and dwarfs) known as

- (i) Fighters and Sitters  
(ii) Macregates and Micregates  
(iii) Gyne and Aners  
(iv) Ergates and Attendants

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- (b) Bioindicators are used for

- (i) Oxygen demand (ii) Air pollution  
(iii) Mineral present (iv) All of the above
- (c) Butterflies that feed on few specific kinds of  
food plants are known as

- (i) Polyphagous (ii) Oligophagous  
(iii) Monophagous (iv) None of these

- (d) Population of a group of individuals belonging  
to same

- (i) Genus (ii) Species  
(iii) Family (iv) Order

- (e) One adult male, more than one adult female  
group is seen in which primate species ?

- (i) Hoolock Gibbon  
(ii) Assamese Macaque  
(iii) Golden Langur  
(iv) All of the above

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[Turn over

- (f) Two animal species inhabit a tree ; however, feed on different food items. What particular niche they are maintaining between them ?

- (i) Spatial niche
- (ii) Trophic niche
- (iii) Multidimensional niche
- (iv) None of the above.

2. Answer the following very short type of questions  
(All five questions are compulsory) :  $2 \times 5 = 10$

- (a) How group living is beneficial for the mammals ?
- (b) Mention the major differences between moths and butterflies.
- (c) Mention the basic difference between home range and territory in animals.
- (d) In which population growth curve, density reaches the upper limit, remains at that level for a time, then declines suddenly, indicating catastrophic conditions ?
- (e) Define migration of animals.

3. Answer the following short type of questions (any six out of nine questions) :  $5 \times 6 = 30$

- (a) What do you mean by wildlife-livestock interface ? Explain why it is a major threat for biodiversity.  $2+3=5$
- (b) What do you mean by zoonotic disease ? Explain how it spread from wildlife to human.  $2+3=5$
- (c) What is the significance of mudpuddling in Lepidopteran insects ? 5
- (d) State the difference between crude density and ecological density. 5
- (e) What is climate change ? Explain briefly about the impact of climate change on the biology of insect with a suitable example.  $2+3=5$
- (f) Differentiate between learned and innate behaviour with suitable examples. 5
- (g) What is a bioindicator species ? Briefly discuss about the role of a bioindicator species in grassland ecosystem.  $2+3=5$
- (h) Define carrying capacity with suitable diagram. 5
- (i) Differentiate between polygyny and polyandry with suitable examples in birds. 5

4. Answer any *one* of the following long answer type questions :  $10 \times 2 = 20$

(a) What do you mean by social organization ? Describe briefly the social organization in any of the hymenopteran insects.  $3 + 7 = 10$

(b) Name two endangered primates species in Assam. Discuss eco-biology of one of the species in detail.  $2 + 8 = 10$

(c) What is the different between habital and niche ? Describe different niche theories have been propounded with suitable examples and illustration.  $2 + 8 = 10$

5. Answer any *one* of the following very long answer type questions :  $14 \times 1 = 14$

(a) Describe briefly about the life cycle of a butterfly species belonging to Papilionidae family. Mention how host plants and nectaring plants are associate with their life cycle.  $7 + 7 = 14$

(b) What is parental care ? Narrate parental care in birds with suitable examples.  $2 + 12 = 14$