FOURTH SEMESTER B.Sc. DEGREE (SUPPLEMENTARY) EXAMINATION, APRIL 2017

(UG—CCSS)

Zoology

ZO 4B 07—ENVIRONMENTAL BIOLOGY, WILD LIFE TOXICOLOGY, ETHOLOGY AND EVOLUTION

(2009—2012 Admissions)

Time : Three Hours   Maximum : 30 Weightage

I   Answer all *twelve* questions. Each question carries ¼ weightage,

(A) Objective type questions :

1   Who among the following gave experimental evidence to show that biochemical evolution from inorganic chemicals is possible ?

     (a) Miller and Urey.   (c) Charles Darwin.

     (b) Watson and Crick.   (d) J. B. Lamarck.

2   Which among the following is <u>not</u> a biological hot spot ?

     (a) Andaman and Nicobar islands.

     (b) Western Ghats.

     (c) Himalayan Region.

     (d) Amazon forests.

3   Which among the following is a toxic component of vehicle exhausts ?

     (a) Freon.   (c) SO_2.

     (b) PCB.   (d) CO_2.

4   An extinct bird that is considered as a link between reptiles and birds is :

     (a) Dodo.   (c) Archaeopteryx.

     (b) Passenger Pigeon.   (d) Kiwi.

(B) Name the following :—

5   The most significant adaptation in the evolution of human beings is ————.

6   An animal that shows catadromous migration.

7   The book published by Charles Darwin on evolution.

8   An example for an animal with cosmopolitan distribution.

Turn over

C Fill up the blanks :

9 A period of suspended development in invertebrate, embryos during unfavourable environmental conditions is known as ————.

10 Endangered species that face imminent extinction are recorded in the ————.

11 The expansion of the synonym CITES is ————.

12 An example for a living fossil is ————.

II. Short answer questions. Answer all *nine* questions. $(12 \times \frac{1}{4} = 3$ weightage)

13 State Liebig's Law of minimum. How is it applied ?

14 What is Shannon diversity index ?

15 What is commensalism ? Give one example.

16 What are pheromones ? Mention any *one* application that uses pheromones.

17 What is an ecotone ?

18 Write a short note on botulism.

19 What is innate behaviour ?

20 What is circadian rhythm ?

21 How does genetic drift affect evolution ?

III. Short answer questions. Answer any *five* questions : $(9 \times 1 = 9$ weightage)

22 State the laws of thermodynamics.

23 Outline the concept of sustainable development.

24 Distinguish between LD50 and LC50.

25 Give an outline of the social behaviour of elephants.

26 Explain Hardy-Weinberg equilibrium.

27 Write a short note on the impact of ecotourism. Add a note on ways to manage ecotourism.

28 Highlight the peculiarities of the Australian Zoogeographic region.

IV. Essay questions. Answer any *two* questions : $(5 \times 2 = 10$ weightage)

29 Describe the Nitrogen cycle.

30 Write an essay on the importance and techniques of conserving biodiversity.

31 Write an essay on Darwinian and Lamarckian theories of evolution.

$(2 \times 4 = 8$ weightage)