2017

(CBCS)

(3rd Semester)

ZOOLOGY

THIRD PAPER

(Evolution and Ethology)

Full Marks : 75

Time : 3 hours

(PART : B—DESCRIPTIVE)

(*Marks* : 50)

The questions are of equal value

1. Explain the evolutionary adaptation of humans living at high altitude.

Or

Describe the rise and fall of melanism in peppered moth.

2. Discuss the theory of symbiogenesis and the nature of symbiogenesis in *Angomonas deanei*.

Or

Describe the concept of prebiotic soup theory and elaborate it in the light of Miller's experiment.

3. Explain out of Africa theory in the light of Mitochondrial Eve and Y-chromosomal Adam.

Or

Compare and contrast the concepts of Batesian and Müllerian mimicries using suitable examples.

4. Describe the concept behind Pavlov's conditioning and how it differs from imprinting.

Or

Give an account on the biological significance of dancing in bees.

5. Discuss the principle of evolutionary arms race with examples.

Or

What are the behavioural functions of steroids and oxytocin? Add a note on transgender hormone replacement therapy.

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Subject Code : ZOO/III/EC/05

Booklet No. A

Date Stamp .....

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To be filled in by the Candidate

CBCS
DEGREE 3rd Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Subject .....
Paper .....

INSTRUCTIONS TO CANDIDATES

1. **The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.**
2. **This paper should be ANSWERED FIRST and submitted within 1 (one) Hour of the commencement of the Examination.**
3. **While answering the questions of this booklet, any cutting, erasing, over-writing or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.**

To be filled in by the Candidate

CBCS
DEGREE 3rd Semester
(Arts / Science / Commerce / .....) Exam., **2017**

Roll No. .....
Regn. No. .....

Subject .....
Paper .....

Descriptive Type
Booklet No. B .....

Signature of Scrutiniser(s)

Signature of Examiner(s)

Signature of Invigilator(s)

/52

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(CBCS)

(3rd Semester)

ZOOLOGY

THIRD PAPER

(Evolution and Ethology)

(PART : A—OBJECTIVE)

(*Marks* : 25)

The figures in the margin indicate full marks for the questions

SECTION—A

(*Marks* : 10)

Put a Tick (✓) mark against the correct answer in the corresponding brackets : 1×10=10

1. Darwin's finches are found in

(a) Galapagos Islands only ( )

(b) Cocos Islands only ( )

(c) Galapagos Islands and Cocos Islands ( )

(d) Cocos Islands and Polynesia ( )

2. Sickle-cell anaemia is due to a mutation in

(a) α(A) chain of HbC ( )

(b) β(B) chain of HbA ( )

(c) α(A) chain of HbS ( )

(d) β(B) chain HbD ( )

3. 'The Age of Fishes' refers to

(a) Devonian period ( )

(b) Silurian period ( )

(c) Cambrian period ( )

(d) Jurassic period ( )

4. The largest animal during Cambrian explosion (or the largest invertebrate of all times) was

(a) *Opabinia* ( )

(b) *Anomalocaris* ( )

(c) *Halucigenia* ( )

(d) *Wiwaxia* ( )

5. Controlled use of fire originated with

(a) *Australopithecus afarensis* ( )

(b) *Homo habilis* ( )

(c) *Homo neanderthalensis* ( )

(d) *Homo erectus* ( )

6. Aposematism is used as a/an

(a) sexual attractant ( )

(b) aggressive mechanism ( )

(c) defence mechanism ( )

(d) predatory mechanism ( )

7. Egg-rolling behaviour in greylag goose is an example of

(a) fixed-action pattern ( )

(b) associative learning ( )

(c) imprinting ( )

(d) operant behaviour ( )

8. Echolocation in bats involves the production of

(a) low-frequency sound, typically < 20 Hz ( )

(b) high-frequency sound, typically > 20 kHz ( )

(c) medium-range sound, between 20 Hz to 20 kHz ( )

(d) optimal-frequency sound, approximately at 10 kHz ( )

9. Adrenaline and noradrenaline are primarily responsible for

(a) territorial defence ( )

(b) matting preferences ( )

(c) sexual aggression ( )

(d) fight-or-flight response ( )

10. Melatonin is a hormone that regulates

(a) gestation (childbirth) ( )

(b) secondary sexual characters ( )

(c) sleep-wake cycle ( )

(d) mammary gland secretion ( )

SECTION—B

(*Marks* : 15)

Write short notes on the following : 3×5=15

1. Allopatric speciation

Or

Main postulates of natural selection

2. RNA world hypothesis

Or

Extinction of dinosaurs

3. Ethiopian or Afrotropical realm

Or

Camouflage

4. Reciprocal altruism

Or

Infrasound

5. Queen mandibular pheromone

Or

Male pregnancy in animals

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