P - III (1+1+1) H / 20 (N)

2020

ZOOLOGY (Honours)

Paper Code : IX - A & B

[New Syllabus]

Full Marks : 50 Time : Two Hours

Important Instructions for Multiple Choice Question (MCQ)

- Write Subject Name and Code, Registration number, Session and Roll number in the space provided on the Answer Script.

  Example : Such as for Paper III-A (MCQ) and III-B (Descriptive).

  Subject Code : | III | A | & | B |

  Subject Name : | |

- Candidates are required to attempt all questions (MCQ). Below each question, four alternatives are given [i.e. (A), (B), (C), (D)]. Only one of these alternatives is 'CORRECT' answer. The candidate has to write the Correct Alternative [i.e. (A)/(B)/(C)/(D)] against each Question No. in the Answer Script.

  Example — If alternative A of 1 is correct, then write :
  1. — A

- There is no negative marking for wrong answer.

মাল্টিপল চয়েস প্রশ্নের (MCQ) জন্য জরুরী নির্দেশাবলী

- উত্তরপত্রে নির্দেশিত স্থানে বিষয়ের (Subject) নাম এবং কোড, রেজিস্ট্রেশন নম্বর, সেশন এবং রোল নম্বর লিখতে হবে।

  উদাহরণ — যেমন Paper III-A (MCQ) এবং III-B (Descriptive)।

  Subject Code : | III | A | & | B |

  Subject Name : | |

- পরীক্ষার্থীদের সবগুলি প্রশ্নের (MCQ) উত্তর দিতে হবে। প্রতিটি প্রশ্নে চারটি করে সম্ভাব্য উত্তর, যথাক্রমে (A), (B), (C) এবং (D) করে দেওয়া আছে। পরীক্ষার্থীকে তার উত্তরের স্বপক্ষে (A) / (B) / (C) / (D) সঠিক বিকল্পটিকে প্রশ্ন নম্বর উল্লেখসহ উত্তরপত্রে লিখতে হবে।

  উদাহরণ — যদি **1** নম্বর প্রশ্নের সঠিক উত্তর **A** হয় তবে লিখতে হবে :

  1. — A

- ভুল উত্তরের জন্য কোন নেগেটিভ মার্কিং নেই।

Paper Code : IX-A

Full Marks : 10 Time : Thirty Minutes

Choose the correct answer.

Each question carries 1 mark.

1. The ability to taste phenylthiocarbamide (PTC) is a trait controlled by 2 alleles (PTC taster and PTC non-taster). Suppose 36% of a remote mountain village cannot taste PTC and must, therefore, be homozygous recessive (aa) for the PTC non-taster allele. If this population conforms to Hardy-Weinberg expectations for this gene, what percentage of the population must be homozygous (AA) for the PTC taster allele ?

   (A) 48%

   (B) 40%

   (C) 16%

   (D) 32%

2. Which of the following does NOT tend to promote speciation ?

   (A) founder effect

   (B) reproductive isolation

   (C) natural selection

   (D) gene flow

3. Which of the following are the postulates of Darwin's theory of evolution?

   (A) Within any population, there is natural variation.

   (B) Even though all species produce a large number of off springs, populations remain fairly constant naturally.

   (C) The struggle for survival within populations eliminates the unfit individuals.

   (D) All of the above.

Turn Over

4. The wings of insects and the wings of bats represent a case of —

(A) Divergent evolution

(B) Convergent evolution

(C) Parallel evolution

(D) Neutral evolution

5. Which of the following basic processes affect the Hardy Weinberg equilibrium ?

(A) Mutation and recombination

(B) Gene migration and genetic drift

(C) Natural selection

(D) All of these

6. Which one of the following is NOT covered under Taxonomy ?

(A) Alpha taxonomy

(B) Beta taxonomy

(C) Delta taxonomy

(D) Gamma taxonomy

7. Example of a branch-runner :

(A) Squirrel

(B) Sloth

(C) Gibbon

(D) Orangutan

8. The interaction in which an individual gives up or sacrifices some of its own reproductive potential to benefit another individual is called —

   (A) Territory

   (B) Altruism

   (C) Cooperation

   (D) Fixed Action Pattern

9. Learning is a durable change in behaviour as a result of —

   (A) Instinct

   (B) Experience

   (C) Imprinting

   (D) Altruism

10. Synonym is —

   (A) Two organisms with one name

   (B) One organism with two names

   (C) Same genus and species name

   (D) None of these

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2020

ZOOLOGY (Honours)

Paper Code : IX-B

[New Syllabus]

Full Marks : 40 Time : One Hour Thirty Minutes

The figures in the margin indicate full marks.
Write your answer maximum within one page for the questions carrying 4 *marks each and maximum within three pages for the questions carrying* 12 *marks each.*

Unit - 1

(Taxonomy and Animal Behaviour)

1. Answer any *two* questions : 4×2=8

   (a) Write a short note on molecular taxonomy.

   (b) Comment on sign stimulus and how such stimulus can elicit a fixed action pattern.

   (c) Define kinesis and its types.

   (d) Write a short note on 'law of priority'.

2. Answer any *one* question : 12×1=12

   (a) What do you mean by parental investment? Discuss with examples the phenomenon of parental investment as seen in fishes. Comment on the cost and benefit of such kind of animal behaviour. 2+7+3=12

   (b) Define the concept of uniqueness, universality and stability of Zoological nomenclature. Elaborate on the salient features of the International Code of Zoological Nomenclature. 2+2+2+6=12

Turn Over

(c) Define Eusociality. Write two important characteristics of Eusocial insects. State the significance of sterile caste in a termite colony. Add a note on Waggle dance of honey bee. 2+2+4+4=12

Unit - 2

(Adaptation and Evolution)

3. Answer any *two* questions : 4×2=8

   (a) Write short note on adaptive radiation.

   (b) State briefly the modern synthetic theory of evolution.

   (c) Isolation leads to speciation. Justify the statement.

   (d) Write short note on natural selection.

4. Answer any *one* question : 12×1=12

   (a) Define fossil. Describe briefly the different types of fossils. Write the significance of fossils. 2+6+4=12

   (b) Define with example protective and aggressive colouration. Write down the structural modifications for volant adaptations in birds. What do you mean by hybrid infertility or hybrid breakdown? 4+4+4=12

   (c) Describe the geographic boundary, climatic features and common vertebrate fauna of the Oriental realm. Comment on filter routes and sweep stake routes. (3+2+3)+2+2=12

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