2021

ZOOLOGY (Honours)

Paper Code : IX - A & B

[New Syllabus]

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. Systematics deals with —
   (A) Identification of organism
   (B) Classification of organisms
   (C) The kinds and diversity of all organisms and the existing relationship among themselves
   (D) Identification, naming and classification of both plants and animals

2. Numerical taxonomy is also referred to as —
   (A) Statistical taxonomy
   (B) Phenetics
   (C) Computer aided taxonomy
   (D) All of the above

3. Coacervates were produced by the evolutionary biologist —
   (A) Fox
   (B) Oparin
   (C) Miller
   (D) Darwin

4. In Miller's experiment, which of the following gases was not used —
   (A) Methane
   (B) Ammonia
   (C) Carbon dioxide
   (D) Hydrogen

5. The study of fossils is called —

(A) Palaeontology

(B) Herpetology

(C) Saurology

(D) Organic evolution

6. 'Appearance of first birds' occurred in which geological period under Mesozoic era?

(A) Cretaceous

(B) Jurassic

(C) Triassic

(D) None of the above

7. Kiwi, the bird, is usually found in —

(A) Australian realm

(B) Oriental realm

(C) Ethiopian realm

(D) Neotropical realm

8. The experiment that simulated conditions thought to be present on the early earth was —

(A) Hershey-Chase experiment

(B) Geiger-Marsden experiment

(C) Miller-Urey experiment

(D) Schiehallion experiment

9. Genetic drift is found in —

(A) Small population with or without mutated gene

(B) Large population with random mating

(C) Plant population

(D) Animal population

10. Gecko, a type of reptile, shows which one of the following adaptations?

(A) Cursorial adaptation

(B) Aquatic adaptation

(C) Volant adaptation

(D) Scansorial adaptation

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Paper Code : IX - B

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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) Discuss the principle and merits of Cladistic classification.

(b) Write short notes on 'allopatric speciation' and 'parapatric speciation'.

(c) Explain the concept of Selfish behaviour in animals.

(d) Give an account on parent-offspring conflict.

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

(a) Discuss about the advantages and disadvantages of Biological Species Concept. Define altruism and reciprocal altruism with examples. How does rate of migration change allele frequency? 4+4+4

(b) What is fixed action pattern (FAP)? Comment on components of FAP. Define 'phenotypic plasticity' with one suitable example. State briefly the use of pheromones in mammals. 2+3+3+4

(c) Distinguish between Instinctive and Learned behaviour with example. Discuss how honey bees negotiate the problem to calculate the distance and direction of food source with reference to the position of their hives. Define 'fitness' in the light of population genetics. Explain "Darwinian fitness". 4+4+2+2

Unit - 2

(Adaptation and Evolution)

3. Answer any *two* questions : 4×2=8

(a) Give an account on 'RNA World Hypothesis' with respect to origin of life.

(b) Write a short note on dating of fossils.

(c) State the adaptive significance of cryptic colouration.

(d) Distinguish between aggressive and protective mimicry.

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

(a) State the reactions that took place to form amino acids during prebiotic atmosphere. Explain how genetic drift influences Hardy-Weinberg equilibrium. Define punctuated equilibrium. 5+5+2

(b) Define fossorial adaptation with examples. Discuss about the essential features required for an animal to be cursorial. Write a short note on 'founder effect'. 2+6+4

(c) Discuss about the 'distribution in space' for animals. Describe the geographic boundary, climatic features and common vertebrate fauna of the Ethiopian realm. Give an example of mammal that shows bipolar distribution. 3+(3+2+3)+1

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