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E-6637

M.Sc. (IIIrd Semester) Examination, 2021

BOTANY

(Evolutionary Biology)

Time Allowed : Three Hours

Maximum Marks : 70

Minimum Pass Marks : 25

SECTION - A

Note : Attempt any ten questions. Each question carries one mark. **1×10=10**

Q. 1. Objective type :

Fill in the blanks :

(i) The theory of evolution by natural selection, first formulated in Darwin's book is _____.

(ii) Dudhwa National Park is located in _____.

(iii) MAB stands for _____.

(iv) 'Project Tiger' in India was started in the year _____.

(v) Gene mutation is produced in _____.

Multiple choice :

(vi) Sudden change in structure and activity of gene is called :

(a) Variation

(b) Evolution

(c) Mutation

(d) Hybridization

(vii) Gene on one locus influence the gene on another locus it is called :

(a) Epistatic

(b) Complementary

(c) Duplicating

(d) None

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(viii) When a character is controlled by two different genes independently or together the effect is called :

(a) Duplicating genes

(b) Supplementary gene

(c) Epistasis

(d) Complementary gene

(ix) Genes modified the effect of other gene is called :

(a) Modifier

(b) Supporter

(c) Suppressor

(d) Multiplier

(x) Who proposed mutation theory :

(a) Hugo de Vries

(b) Darwin

(c) Weismann

(d) Dodson

(xi) When mutation is from wild type to new type it is called :

(a) Forward mutation

(b) Backward mutation

(c) Point mutation

(xii) Point mutation results in :

(a) Free martin

(b) Intersex

(c) Sickle cell anemia

SECTION - B

Note : Attempt any five questions. Each question carries 2 marks. **5×2=10**

Q. 2. Very Short Answer Type (25-30 words) :

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(i) What is fossil ?

(ii) What is species ?

(iii) What is mutation ?

(iv) What is biodiversity ?

(v) What do you mean by ex-situ conservation of biodiversity ?

(vi) Define phenotypic variation.

(vii) What is continental drift ?

SECTION - C

Note : Attempt any five questions. Each question carries 4 marks. **5×4=20**

Q. 3. Short Answer Type (250 words) :

(i) How is diversity at all levels generally conserved ?

(ii) Define genetic diversity and species diversity.

(iii) Give an account of biogeographical regions of India.

(iv) What do you understand by the modern "Synthetic theory" of evolution ?

(v) Explain the mutation theory.

(vi) Discuss the differences between the life on oceanic and continental islands.

(vii) Explain the origin of unicellular and multicellular organisms.

SECTION - D

Note : Attempt any three questions. Each question carries 10 marks. **3×10=30**

Q. 4. Essay Type (more than 500 words) :

(i) It is argued that although Darwin could think of "survival of the fittest" but could not foresee the "arrival of the fittest". Comment upon this statement using suitable examples.

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(ii) What is biodiversity ? Why has it become important recently ?

(iii) What are the three major threat categories of species ? Describe with examples.

(iv) Write an essay on mutations.

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