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E-6637

M.Sc. (III[rd] 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

(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) :

(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.

(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.