

SAMPLE PAPER - 2014
BIOLOGY
Class – XII

Time : 3 Hours

Max. Marks : 70

General Instructions :

- *All questions are compulsory.*
- *The question paper consists of four sections A, B, C and D. Section-A contains 8 questions of 1 mark*
- *each, Section B is of 10 questions of 2 marks each, Section C has 9 questions of 3 marks each whereas Section D is of 3 questions of 5 marks each.*
- *There is no overall choice. However, an internal choice has been provided in one question of 2 marks, one question of 3 marks and all the three questions of 5 marks weightage. A student has to attempt only one of the alternatives in such questions.*
- *Wherever necessary, the diagrams drawn should be neat and properly labeled.*

SECTION-A

- Q-1 A garden pea plant produced axial white flowers, another of the same species produced terminal Violet flowers. Identify the dominant traits.
- Q-2 Write the percentage of F₂ homozygous and heterozygous population in a typical monohybrid cross.
- Q-3 Name one autosomal dominant and one autosomal recessive mendelian disorder in humans.
- Q-4 State the significance of the study of fossils in evolution.
- Q-5 “Sweet potato” tubers and potato tubers are the result of convergent evolution.” Justify the statement.
- Q-6 What are palindromes?
- Q-7 What is a bioreactor?
- Q-8 what is a cloning vector?

SECTION-B

- Q-9 Why did mendel choose garden pea for his experiment? How did he make sure that the plant were true breeding?
- Q-10 (1) State the principle of independent assortment.
(2) How would the following affect the phenomenon of independent assortment?
(a) crossing over (b) linkage.
- Q-11 When tall pea plants were selfed, some of the off springs were dwarf. Explain with the help of a punnett square.
- Q-12 What is biodiversity? Why is it a matter of concern now?
- Q-13 What does the term genetic diversity refer to? What is the significance of large genetic diversity in a population.
- Q-14 List the features that make a stable biological community.
- Q-15 Explain biomagnification.

- Q-16 Explain Translation in detail.
Q-17 Explain the process of RNA interference.
Q-18 Differentiate between gene therapy and gene cloning.

OR

Draw a labeled diagram of an adaptor molecule.

SECTION-C

- Q-19 Explain Transcription.
Q-20 Describe Meselson and Stahl experiment in short.
Q-21 Name the three types of RNA and their role in protein synthesis.
Q-22 Explain the salient features of Hugo de vries theory of mutation.
Q-23 Explain speciation with example.
Q-24 What is industrial melanism?
Q-25 Draw a diagram of vector pBR322.
Q-26 Explain the mechanism of PCR.
Q-27 Explain the carbon cycle in nature.

OR

How is the 6th extinction presently in progress and how it is different from the previous episodes?

SECTION-D

- Q-28 (a) Explain "founder effect".
(b) State Oparin and Haldane hypothesis.
(c) Describe Stanley and Miller's experiment and give its significance.

OR

Explain the process DNA fingerprinting.

- Q-29 What is rDNA technology?

OR

What are Transgenic animals? Explain any four ways in which such animals can be beneficial to man.

- Q-30 Describe the following (a) chipko movement (b) scrubber (c) Radiactive waste

OR

Describe the hydrarch succession.
