

**D-3-B**

Roll No.....

Total No. of Questions : 14]

[Total No. of Printed Pages : 4

**XIIARKDN20**

**2003-B**

**BOTANY**

**(Biology)**

**Time : 1½ Hours]**

**[Maximum Marks : 35**

**Section-A**

1 each

1. In the DNA double helix, purine always paired with pyrimidine base through H-bonds, that leads to :  
(A) The antiparallel nature  
(B) Uniform length in all DNA  
(C) Uniform width throughout DNA  
(D) The semiconservative nature
2. A collection of plants and seeds having diverse alleles of all the genes of a crop is called Germplasm. (True/False)

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Turn Over

3. Biological control agent is obtained from :
- (A) *Bacillus thuringiensis*
  - (B) *E. coli*
  - (C) *Agrobacterium tumefaciens*
  - (D) *Meloidogyne incognita*
4. Depletion of which gas in the atmosphere can lead to an increased incidence of Skin Cancer :
- (A) Methane
  - (B) Nitrous oxide
  - (C) Ozone
  - (D) Ammonia

**Section-B**

2 each

5. How many cells are present in the pollen grain at the time of their release from Anther ? Name the cells.
6. How do roots take part in vegetative reproduction ?

*Or*

Briefly explain any *two* outbreeding devices with examples which promote cross pollination.

7. Explain what is meant by biofortification.

**Section-C**

3 each

8. (i) Explain the process of double fertilization in angiosperms.  
(ii) List the changes each part of the fertilized ovule undergoes to develop into seed.
9. Who proposed chromosomal theory of inheritance ? Point out any *two* similarities in the behaviour of chromosomes and genes.
10. (i) Why do farmers prefer biofertilizers to chemical fertilizers these days ? Explain. <https://www.jkboseonline.com>  
(ii) How do *Anabaena* and *Mycorrhiza* act as biofertilizers ?
11. Explain parasitism with the help of *two* examples and how is it different from predation.

*Or*

Explain any *three* measures which will control vehicular air pollution in Indian cities.

12. Write a brief note on global warming.

**Section-D**

5 each

13. Explain the process of transcription in Prokaryotes. How is the process different in eukaryotes ?

( 4 )

*Or*

Why is DNA replication said to be semiconservative ? Explain the mechanism of DNA replication.

14. What do you mean by Nutrient Cycling ? With graphic representation explain the carbon cycle in detail.

*Or*

Why should we conserve Bio-diversity ? How can we do it ?

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