



General Instructions:-

- i) All questions are compulsory.
- ii) Attempt all the parts of one question together.
- iii) Give labelled diagrams and example wherever required.

- 1. Name two commonly used vectors in r DNA technology. (1)
- 2. Suggest any two possible treatments that can be given to a patient exhibiting adenosine deaminase deficiency. (1)
- 3. Mention how bears escape from stressful time in winters? (1)
- 4. How are GPP and NPP interrelated? (1)
- 5. Why are gametes said to be pure for a character? (1)
- 6. Differentiate between Polygenic Inheritance and Pleiotropy. (2)
- 7. What are Conformers and Regulators? (2)
- 8. What do you understand by "Cry" and "cry"? (2)
- 9. How sticky ends formed on a DNA strand? Why are they called so? (2)
- 10. Give reasons for the following:-
 - a) Shivering in malaria. b) Swelling of lower limbs in Filariasis. (2)
- 11. Rearrange the following in the correct sequence to accomplish an important Biotechnological reaction :- (3)
 - a) In vitro synthesis of copies of DNA of interest
 - b) Chemically synthesized oligonucleotides
 - c) Enzyme DNA Polymerase
 - d) Complementary regions of DNA
 - e) Genomic DNA template
 - f) Nucleotides provided
 - g) Primers
 - h) Thermostable DNA polymerase from *Thermus aquaticus*
 - i) Denaturation of dsDNA.
- 12. Compare and contrast the advantages and disadvantages of the production of genetically modified crops. (3)
- 13. Explain diagrammatically the age structure of expanding, stable and declining populations. (3)
- 14. What will happen (3)
 - a) when complete sets of chromosomes are added to diploid genome?
 - b) when individual chromosomes are added or deleted from the diploid genome?
 - c) when a part of a chromosome is lost?
 - d) when a part of the chromosome breaks and attaches to another non homologous chromosome?
 - e) when a part of chromosome breaks and attaches to the homologue?

f) when one DNA base changes its location?

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BIOLOGY

15. A heavily bleeding and bruised road accident victim was brought to a nursing home. The doctors immediately gave him an injection to protect him against a deadly disease.
- a) What did the doctors inject into the patient's body?
 - b) How do you think this injection would protect the patient against the disease?
 - c) Name the disease against which this injection was given and the kind of immunity it provides. (3)
16. Explain the process of succession of plants. (5)

-X-X-X-X-X-X-