

CBSE Class 12 Biology

Biotechnology and its Applications

Section 'A'

- Q.1. Why do children cured by enzyme-replacement therapy for adenosine deaminase deficiency need periodic treatment?**
- Q.2. State the role of C peptide in human insulin.**
- Q.3. State the role of transposons in silencing of mRNA in eukaryotic cells.**
- Q.4. How is 'Rosie' considered different from a normal cow? Explain.**
- Q.5. What was the specialty of the milk produced by the transgenic cow Rosie?**
- Q.6. What are Cry genes? In which organism are they present?**
- Q.7. What is Biopiracy?**
- Q.8. Name the Indian variety of rice patented by an American Company.**
- Q.9. What is bio piracy?**

Section 'B'

- Q.10. Why is proinsulin so called? How is insulin different from it?**
- Q.11. Write the function of adenosine deaminase enzyme. State the cause of ADA Deficiency in humans. Mention a possible permanent cure for an ADA deficiency Patient.**

- Q.12. (a) State the role of DNA ligase in biotechnology.**
(b) What happens when *Meloidogyne incognita* consumes cells with RNAi gene?
- Q.13. Explain how a hereditary disease can be corrected. Give an example of first successful attempt made towards correction of such diseases.**
- Q.14. Explain the process of RNA interference**
- Q.15. What is biopiracy?**
- Q.16. Why is the introduction of genetically engineered lymphocytes into a ADA deficiency patient not a permanent cure? Suggest a possible permanent cure.**
- Q.17. How is 'Rosie' considered different from a normal cow? Explain.**
- Q.18. Why is the introduction of genetically engineered lymphocytes into a ADA deficiency patient not a permanent cure? Suggest a possible permanent cure.**

Section 'C'

- Q.19. Name the insect pest that is killed by the products of cryIAC gene. Explain how the gene makes the plant resistant to the insect pest.**
- Q.20. Explain enzyme-replacement therapy to treat adenosine deaminase deficiency. Mention two disadvantages of this procedure.**
- Q.21. Name the pest that destroys the cotton bolls. Explain the role of *Bacillus thuringiensis* in protecting the cotton crop against the pest to increase the yield.**
- Q.22. (a) Tobacco plants are damaged severely when infested with *Meloidogyne incognita*. Name and explain the strategy that is adopted to stop this infestation.**
(b) Name the vector used for introducing the nematode specific gene in tobacco plant.

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- Q.23. Both Haemophilia and Thalassemia are blood related disorders in humans. Write their causes and the difference between the two. Name the category of genetic disorder they both come under.**
- Q.24. How has RNAi technique helped to prevent the infestation of roots in tobacco plants by a nematode *Meloidogyne incognita*?**
- Q.25. Recombinant DNA-technology is of great importance in the field of medicine. With the help of a flow chart, show how this technology- has been used in preparing genetically engineered human insulins.**
- Q.26. How did the process of RNA interference help to control the nematode from infecting roots of tobacco plants? Explain.**
- Q. 27. Name the genes responsible for making Bt cotton plants resistant to bollworm attack. How do such plants attain resistance against bollworm attacks? Explain.**
- Q.28. Describe any three potential applications of genetically modified plants.**
- Q.29. How did an American Company, Eli Lilly use the knowledge of r-DNA technology to produce human insulin?**
- Q.30. Why do lepidopterans die when they feed on Bt cotton plant? Explain how does it happen.**

