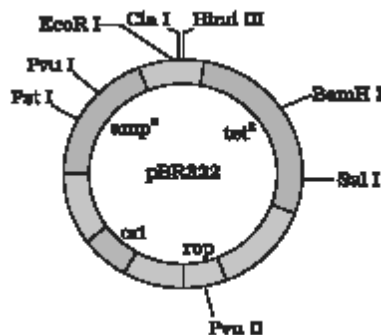


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| 1. Expand GEAC. | 1 |
| 2. Write the trigger for activation of toxin of <i>Bacillus thuringiensis</i> | 1 |
| 3. Name the transgenic rice having β -carotene gene. | 1 |
| 4. What is used to silence mRNA in RNAi mechanism. | 1 |
| 5. ADA is an enzyme which is deficient in a genetic disorder SCID.
What is the full form of ADA? | 1 |
| 6. Name an enzyme catalysing the removal of nucleotides from the ends of DNA. | 1 |
| 7. Write the Significance of 'heat shock' method in bacterial transformation. | 1 |
| 8. Name two bacteria which are the sources of restriction endonuclease? | 1 |
| 9. Identify the steps of PCR in which Taq polymerase is used. | 1 |
| 10. Define recombinant protein. | 1 |
| 11. Expand GMO. How is it different from a hybrid? | 2 |
| 12. Give the full form of ELISA. Which disease can be detected using it?
Discuss the principle underlying the test. | 2 |
| 13. How was Insulin obtained before the advent of rDNA technology?
What were the problems encountered? | 2 |
| 14. Name the first transgenic cow. Which gene was introduced in this cow? | 2 |
| 15. How is a mature, functional insulin hormone different from its prohormone form? | 2 |
| 16. What does 'competent' refer to in competent cells used in transformation experiments?
Describe the role of CaCl_2 in the preparation of competent cells? | 2 |
| 17. What is the significance of adding proteases at the time of isolation of genetic material (DNA). Name the enzyme used to digest the cell wall of fungi. | 2 |
| 18. What modification is done on the Ti plasmid of <i>Agrobacterium tumefaciens</i> to convert it into a cloning vector? Name the vector used to transfer gene of interest to animal cell. | 2 |
| 19. How does one visualise DNA on an agarose gel? | 3 |
| 20. For selection of recombinants, insertional inactivation of antibiotic marker has been superceded by insertional inactivation of a marker gene coding for a chromogenic substrate. Give reasons. | 3 |
| 21. Describe the role of <i>Agrobacterium tumefaciens</i> in transforming a plant cell. | 3 |
| 22. a) What are molecular scissors? Give one example.
b) Explain their role in recombinant DNA technology. | 3 |
| 23. Explain the importance of a) ori b) amp ^R and c) rop in the <i>E. coli</i> vector shown below | 3 |



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| 24. a) Mention the role of vectors in recombinant DNA technology. Give any <i>two</i> examples.
b) With the help of diagrammatic representation only, show the steps of rDNA technology. | 5 |
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