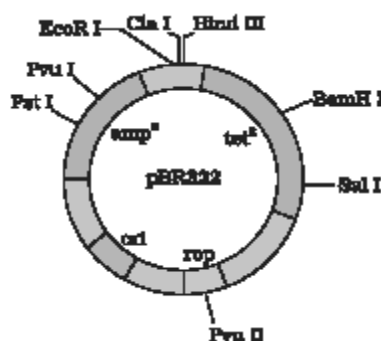


CLASS XII
PRINCIPLES AND PROCESSES OF BIOTECHNOLOGY

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| 1 | Name an enzyme catalysing the removal of nucleotides from the ends of DNA. | 1 |
| 2 | Write the Significance of 'heat shock' method in bacterial transformation. | 1 |
| 3 | Name two bacteria which are the sources of restriction endonuclease? | 1 |
| 4 | Identify the steps of PCR in which Taq polymerase is used. | 1 |
| 5 | Define recombinant protein. | 1 |
| 6 | 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 |
| 7 | 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 |
| 8 | 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 |
| 9 | How does one visualise DNA on an agarose gel? | 3 |
| 10 | For selection of recombinants, insertional inactivation of antibiotic marker has been superseded by insertional inactivation of a marker gene coding for a chromogenic substrate. Give reasons. | 3 |
| 11 | Describe the role of <i>Agrobacterium tumefaciens</i> in transforming a plant cell. | 3 |
| 12 | a) What are molecular scissors? Give one example.
b) Explain their role in recombinant DNA technology. | 3 |
| 13 | Explain the importance of a) ori b) amp ^R and c) rop in the <i>E.coli</i> vector shown below AI'08 | 3 |



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| 14 | a) Mention the role of vectors in recombinant DNA technology. Give any two examples.
b) With the help of diagrammatic representation only, show the steps of rDNA technology. | 5 |
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