



BIOLOGY

BOOKS - JMD BIOLOGY (PUNJABI ENGLISH)

Biotechnology: Principle and Process

Exercise

1. Expand PCR.



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2. Expand Bt.



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3. Name the enzyme used to dissolve bacterial cell wall.



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4. Define Palindromes.



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5. Make a list of tools of recombinant DNA technology.



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6. Name the technique used to separate DNA fragments.



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7. Describe briefly "Origin of replication".



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8. Name the bacterium which acts as natural genetic engineer.



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9. What are molecular scissors? Explain their role.





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10. Why is *Agrobacterium tumefaciens* is a good cloning vector ? Explain.



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11. In recombinant DNA technique the term vector refers to

A. Plasmid that can cut DNA at specific base sequence

- B. Plasmid that can transfer the foreign DNA into a living cell
- C. Enzyme that can join the different DNA fragments
- D. All of the above.

Answer: B



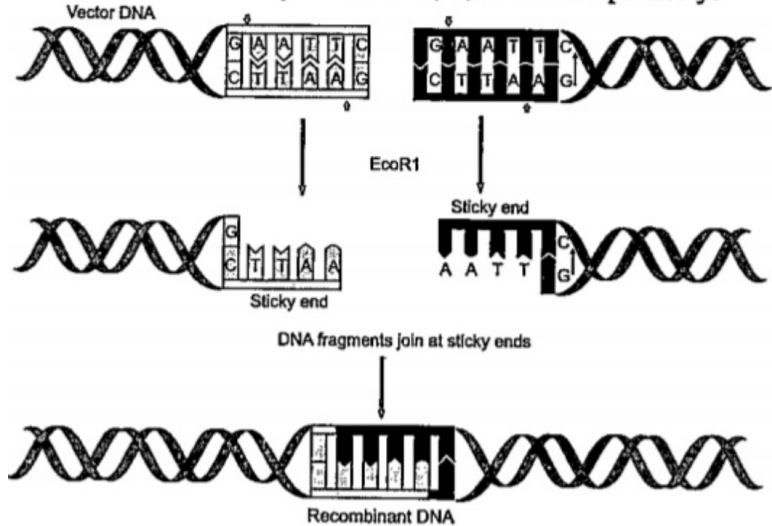
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12. Briefly write about Gene gun method and Microinjection method for introduction of alien DNA into host cell.



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13. Consider the following figure of DNA and identify the labels 1, 2, 3 and 4 respectively.



A. 1 - Vector RNA, 2 - Foreign DNA, 3 DNA fragments join at sticky ends, 4 - Recombinant DNA

B. 1 - Vector DNA, 2 - Foreign DNA, 3 DNA fragments join at sticky ends, 4 - Recombinant RNA

C. 1 - Vector DNA, 2 - Foreign DNA, 3 - DNA

fragments join at blunt ends, 4 -

Recombinant DNA

D. 1 - Vector DNA, 2 - Foreign DNA, 3- DNA

fragments join at sticky ends, 4 -

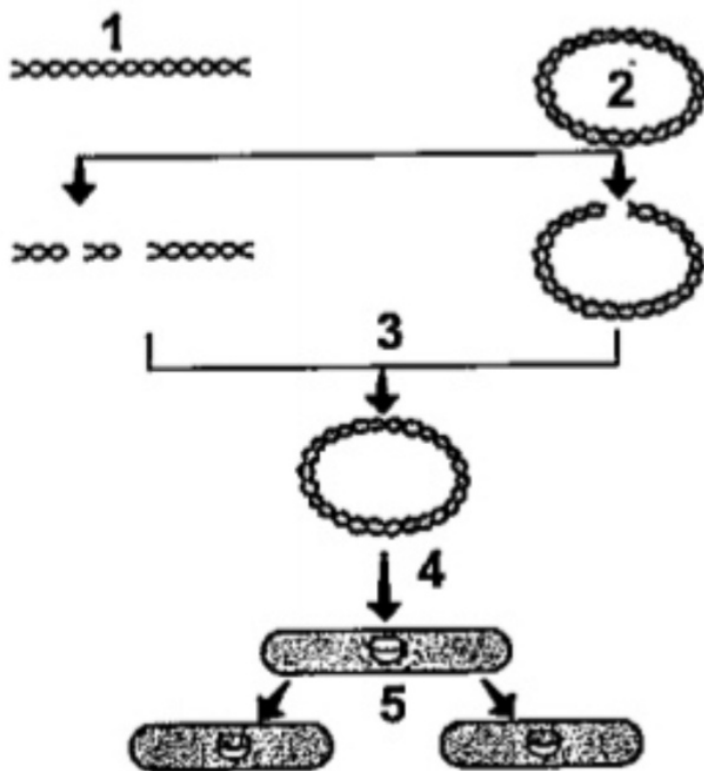
Recombinant DNA

Answer:



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14. Consider the parts labelled in 1, 2, 3 and 4 respectively in the following diagrammatic representation of recombinant DNA technology and find out the correct sequences



:

A. 1 - Foreign DNA, 2 Vector DNA, 3 Lyases

join foreign DNA to plasmid, 4 -

Transformation, 5 - Cells divide

B. 1 - Foreign DNA, 2 -Vector DNA, 3 Ligases

join foreign RNA to plasmid, 4 -

Transformation, 5- Cells divide

C. 1 - Foreign DNA, 2 Vector DNA, 3.Ligases

join foreign DNA to plasmid, 4 -

Transformation, 5- Cells divide

D. 1 - Foreign DNA, 2 Vector DNA, 3 Ligases

join foreign DNA to plasmid, 4 -

Translation, 5 - Cells divide

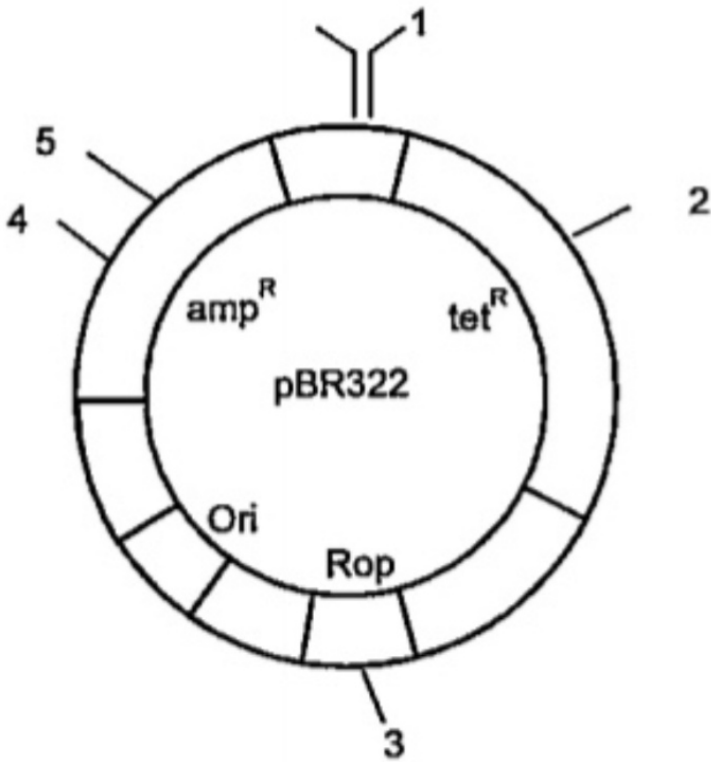
Answer: C



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15. Consider the parts labelled 1, 2, 3, 4 and 5 respectively in the following diagram of

pBR322 and find out the correct sequences :



A. 1 - Hind II, 2 - BamH I, 3 - Pvu, 4 - Pst I, 5 -

Pvu I

B. 1 - Hind III, 2 - BamH II, 3 - Pvu, 4 - Pst I, 5 -

Pvu I

C. 1 - Hind III, 2 - BamH I, 3 - Pvu, 4 - Pst I, 5 -

Pvu II

D. 1 - Hind III, 2 - BamH I, 3 Pvu, 4 - Pst I, 5 -

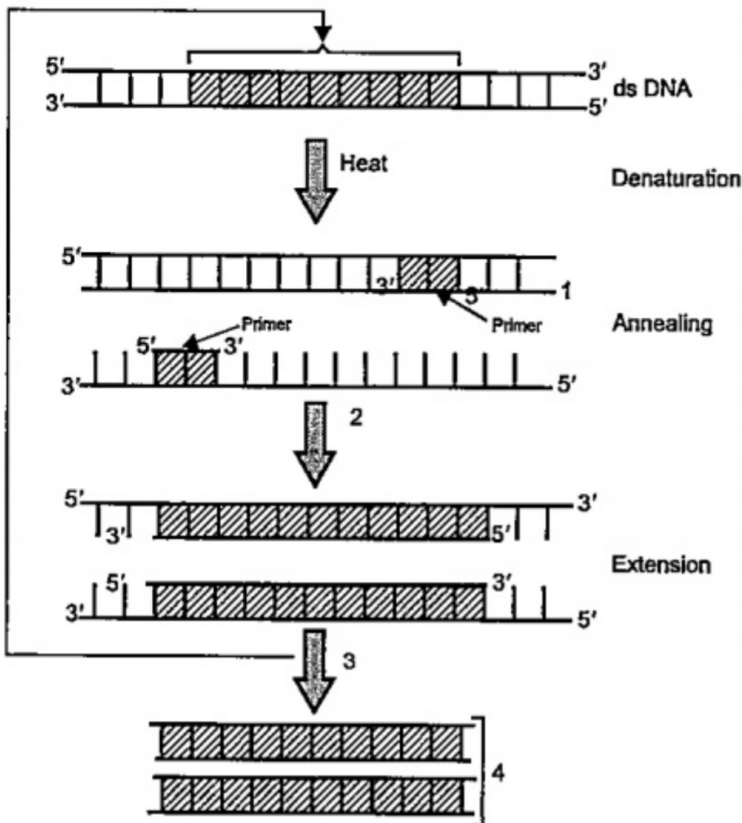
Pvu I

Answer: D



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16. Consider the parts labelled in 1, 2, 3 and 4 respectively in the following diagram of Polymerase chain reaction (PCR) and find out the correct sequence :



A. 1 - Primers, 2 - DNA Polymerase, 3 - 10
cycle, 4 - Amplified

B. 1 - Primers, 2 - DNA Polymerase, 3 - 20
cycle, 4 - Amplified

C. 1 - Primers, 2 - RNA Polymerase, 3 - 30
cycle, 4 - Amplified

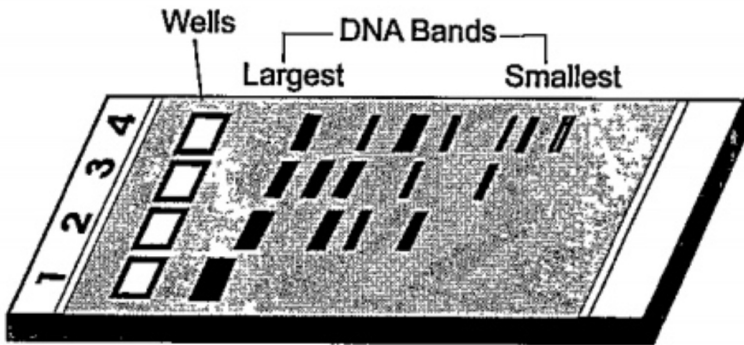
D. 1 - Primers, 2 - DNA Polymerase, 3 - 30
cycle, 4 - Amplified

Answer: C



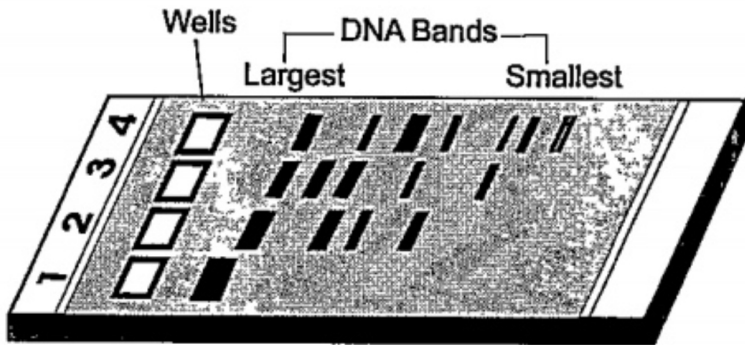
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17. With reference to below figure answer the following questions: What does this figure depict ?



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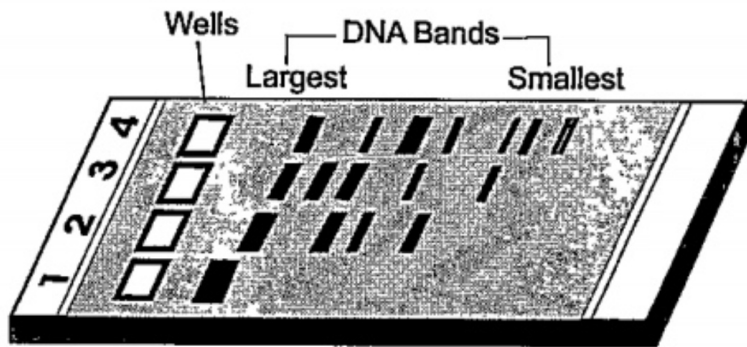
18. With reference to below figure answer the following questions: What is meant by largest and smallest in the picture.



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19. With reference to below figure answer the following questions: Name the compound

used to visualise them.



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