

CLASS: XII

CYCLE TEST- BIOLOGY

MARKS : 20

DATE: 24.10.19

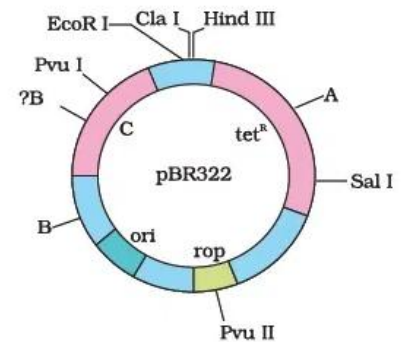
Time: 40min

I. Choose the best answer for the following:

(1X5=5)

1. Name the regions marked A, B and C in the vector given aside.

- | | | |
|-------------------------|-----------------------|----------------------|
| a. A- BamH ₁ | B-Pst ₁ | C-amp ^R |
| b. A- Pst ₁ | B- amp ^R | C- BamH ₁ |
| c. A- BamH ₁ | B- amp ^R | C- Pst ₁ |
| d. A- Pst ₁ | B - BamH ₁ | C- amp ^R |



2. Which of the following is correctly matched?

- Ligase- Molecular scissors
- Thermus aquaticus* – Bt gene
- Agrobacterium tumefaciens* – Tumour
- Hind II - Plasmid vector

3. Which one of the following contains four pyrimidine bases?

- | | |
|--------------|--------------|
| a. GATCAATGC | b. GCUAGACAA |
| c. UAGCGGUAA | d. TGCCTAACG |

4. An enzyme catalysing the removal of nucleotides from the ends of DNA is___

- endonuclease.
- exonuclease.
- DNA ligase.
- Hind – II.

5. A recombinant DNA molecule can be produced in the absence of the following:

- | | |
|------------------------------|------------------|
| a. Restriction endonucleases | b. DNA ligases |
| c. DNA fragments | d. <i>E.coli</i> |

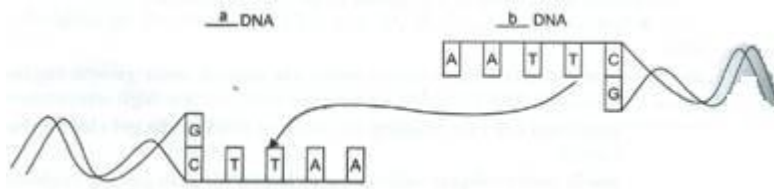
II. Answer the following questions:

6. Why are molecular scissors so called? Write their use in biotechnology. (2)

7. What are 'cloning sites' in a cloning vector? Explain their role. Name any two such sites in pBR322. (2)

8. List the key tools used in recombinant DNA technology. (3)

9. Study the linking DNA shown below and answer the following question. (3)



(i) Name 'a' DNA and 'b' DNA.

(ii) Name the restriction enzyme that recognizes this palindrome.

(iii) Name the enzyme that can link these two DNA fragments.

10. a. With the help of diagrams show the different steps in the formation of recombinant DNA by action of restriction endonuclease enzyme E.coR1.

b. How can be a host made competent? Mention the different methods.

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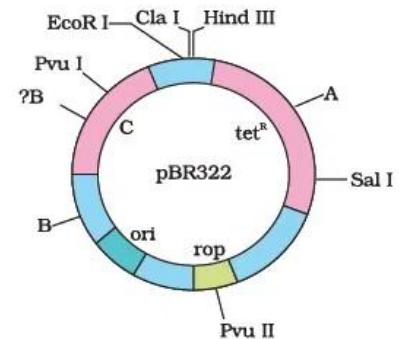
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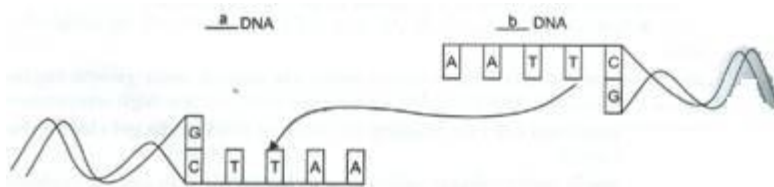
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