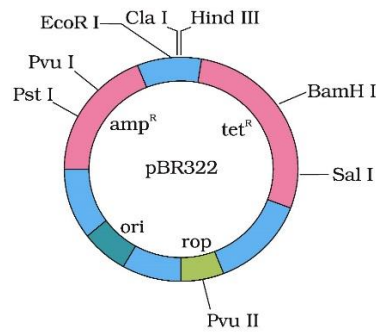
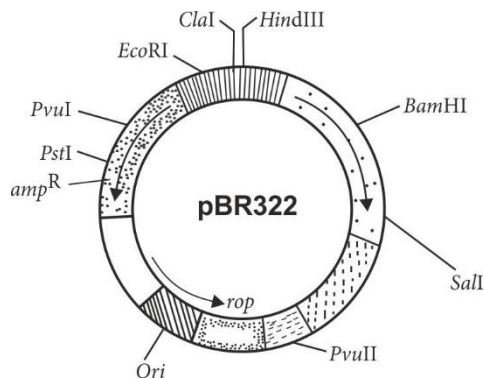


10. *E. coli* cloning vector pBR322



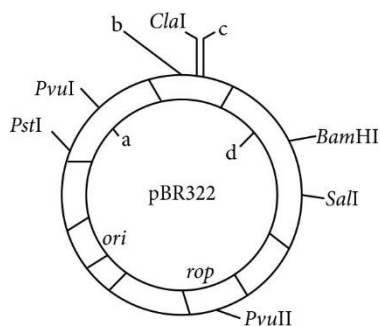
Important questions based on it:



A.

- Name the organism in which the vector shown is inserted to get the copies of the desired gene.
- Mention the area labelled in the vector responsible for controlling the copy number of the inserted gene.
- Name and explain the role of a selectable marker in the vector shown.

(AI 2010)

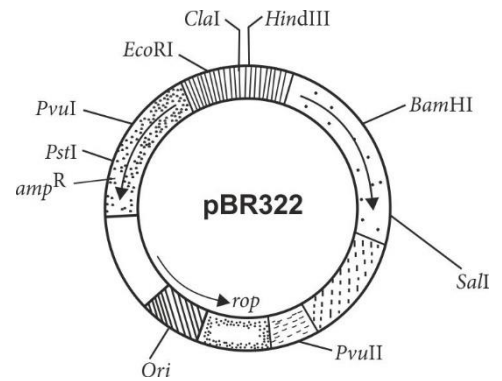


B.

- Identify the selectable markers in the diagram of *E. coli* vector shown below.
- How is the coding sequence of β -galactosidase considered a better marker than the ones identified by you in the diagram? Explain.

(Delhi 2009)

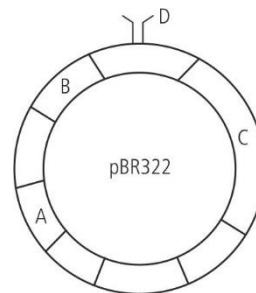
- A. Explain the importance of
- ori*,
 - amp^R* and
 - rop* in the *E. coli* vector shown below. (AI 2008)



- B. Draw pBR322 cloning vector. Label 'ori', 'rop' and any one antibiotic resistance site on it and state their functions. (AI 2015C)
- C. Draw a schematic diagram of the *E. coli* cloning vector pBR322 and mark the following in it:
- ori*
 - rop*
 - ampicillin resistance gene
 - tetracycline resistance gene
 - restriction site *Bam*HI
 - restriction site *Eco*R I
- (AI 2014C)
- D. Draw a schematic sketch of pBR322 plasmid and label the following in it:
- Any two restriction sites.
 - Ori* and *rop* genes.
 - An antibiotic resistant gene.

(Delhi 2012)

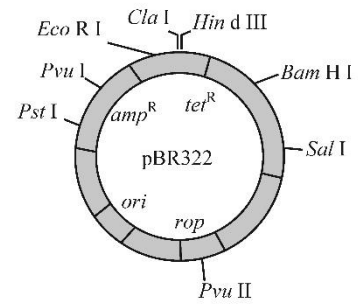
- E. Identify A, B, C and D in the given diagram.



- A-*ori*, B-*amp^R*, C-*tet^R*, D-*Hind*III
- A-*Hind*III, B-*tet^R*, C-*amp^R*, D-*ori*
- A-*amp^R*, B-*tet^R*, C-*Hind*III, D-*ori*
- A-*tet^R*, B-*Hind*III, C-*ori*, D-*amp^R*

(COMEDK)

F. The given figure is the diagrammatic representation of the *E. coli* vector pBR 322. Which one of the given options correctly identifies its certain component(s)?



- (a) *ori*-original restriction enzyme (b) *rop*-reduced osmotic pressure
(c) *HindIII*, *EcoRI* - selectable markers (d) *amp^R*, *tet^R*-antibiotic resistance genes.

(AIPMT Prelims)