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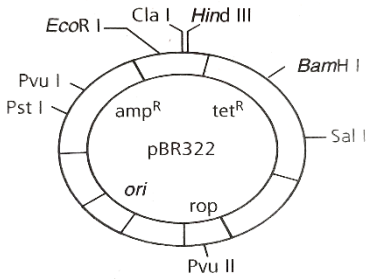
ZIET, CHANDIGARH
REVISION PAPER, SET- I
UNIT- IX
(Chapters: Biotechnology - Principles and Processes, Biotechnology and its Applications)

Subject: Biology **Class: XII**

TIME: 1:00 Hr. **Max. Marks: 20**

Note: Question no. one to four is of **01** mark each, question no five and six is of **02** marks each, question number three is of **03** marks, question no five is a case study based and is of **04** marks and question number six is of **05** marks.

SN	Question	Marks
1	Nuclease enzymes are of the following types- i. Endonuclease ii. Exonuclease iii. Mixonuclease iv. Heteronuclease a- Only I and ii are correct b- Only ii and iii are correct c- Only iii and iv are correct d- Only ii, iii and iv are correct	1
2	What is incorrect about electrophoresis- a- Agarose gel is used for the separation of DNA b- Ethidium bromide is used to dye the DNA bands c- To observe DNA Bands UV light is required d- Larger fragments longest distance	1
3	Which of the following is used is the artificial cloning vector- a- Ampicillin b- Chloramphenicol c- Kanamycin d- All of these	1
4	In which process r- DNA is directly injected into the host cell- a- Biolistic method b- Gene gun method c- Micro- injection method d- Heat shock method	1
5	By using the PCR technique, we can make billions of copies of DNA. i- Which specific enzyme is used in the process for polymerization process and why? ii- What is the annealing process?	2
6	i- Give examples of at least two enzymes used for the isolation of DNA from a fungal hypha. ii- Write an example of a palindromic sequence on which specific restriction endonuclease cleaves and creates sticky ends.	2
7	Explain any three types of gene therapy practices.	3
8	In order to increase crop yield and yield from animal husbandry scientists, develop the idea of genetic engineering. GMOs (genetically modified organisms) are created by using genetic engineering in which genes are altered for beneficial purposes. various GMOs have been developed successfully like ped like Bt cotton, Bt mustard, nematode resistance tobacco, transgenic animals, etc. The production of transgenic livestock has the opportunity to significantly improve human health, enhance nutrition, protect the environment, increase animal welfare, and decrease livestock disease. i- Which statement is incorrect about GMOs- a- GMOs reduce reliance on chemical fertilizers b- Decreases uses of mineral usage by plants c- The enhanced nutritional value of the crop d- Help in creating draught-resistant crops ii- Bacillus thuringiensis is very important as	4

	a- Its DNA acts as a vector b- Its gene is used in the creation of disease-resistant plant c- It is used as a selectable marker d- It is a very efficient cloning vector iii- Cry II Ab is used to contro- a- Cotton ball worm b- Corn borer c- Corn ball worm d- Cotton ball borer iv- Assertion: RNAi principle is used to develop nematode-resistant tobacco plants. Reason: it is based on the silencing of mRNA. a- Both assertion and reason are correct and the reason is the correct explanation of assertion. b- Both assertion and reason are correct and reason is not a correct explanation of assertion. c- Assertion is true but the reason is false. d- Assertion is false but the reason is true.	
9	Answer the following questions based on the diagram i- What does Eco RI represent? ii- What doe "R" means? iii- Identify the gene you would select as a selectable marker and why? iv- Genetic engineers always insert "or" in the cloning vectors. Give reason. v- What is importance of insertional inactivation?  	5