



**DG-3137**  
**Third Year B. Sc. (Sem. V) Examination**  
**March/April - 2016**  
**Microbiology : Paper - MB - 13**  
*(rDNA Technology)*

Time : Hours]

[Total Marks : 50

**Instructions :**

(1)

<p>नीचे दर्शावेक निशानीवाणी विगतो उत्तरवही पर अवश्य लपनी. Fillup strictly the details of signs on your answer book.</p> <p>Name of the Examination : <b>THIRD YEAR B. Sc. (Sem. V)</b></p> <p>Name of the Subject : <b>Microbiology : Paper - MB - 13 (rDNA TECHNOLOGY)</b></p> <p>Subject Code No. : <b>3 1 3 7</b> Section No. (1, 2,.....): <b>Nil</b></p>	<p>Seat No. : <input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/><input type="text"/></p> <div style="border: 1px solid black; border-radius: 15px; padding: 10px; text-align: center; width: 100%;">Student's Signature</div>
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- (2) Figures to the right indicate full marks of the question.  
(3) Draw neat and labelled diagram wherever necessary.

1 Give specific answers : 10

- (a) Why plasmid is an ideal cloning vector for cloning gene ?
- (b) What is Ti Plasmid ? State its importance in rDNA technology.
- (c) What is shot gun cloning ? State its use.
- (d) Enlist four recombinant therapeutic proteins.
- (e) Define shuttle vectors and name the organisms in which they can replicate.

2 Answer any two of the following : 12

- (a) Enlist the characteristics of PUC 19 that make it suitable cloning vector.
- (b) Explain the process of creating suberbug.
- (c) Explain DNA gun for transfection of eukaryotic cells.

- 3** Answer any **two** of the following : **16**
- (a) Explain the methods used for finding right clone using antibody and nucleic acid probes.
  - (b) Discuss the methods for mutagenesis.
  - (c) Explain restriction and modification mechanisms of restriction enzymes.
- 4** Write short notes on any **three** of the following : **12**
- (a) Reporter genes
  - (b) Expression vector
  - (c) Bioremediation of radioactive chemicals and toxic metals.
  - (d) Modified  $\lambda$  phages as cloning vector.
  - (e) Recombinant insulin.
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