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)

(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.

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3  Answer any two of the following:

(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:

(a) Reporter genes
(b) Expression vector
(c) Bioremediation of radioactive chemicals and toxic metals.
(d) Modified \(\lambda\) phages as cloning vector.
(e) Recombinant insulin.