KD-500 Seat No._____

B. Sc. (Sem. V) Examination

October / November – 2017

Microbiology

(r-DNA Technology)

Time : 3 Hours] [Total Marks : **70**

1 (a) Answer the following : (any **two**) **12**

(1) Important steps in the preparation of Recombinant DNA.

(2) Milestones in the field of Recombinant DNA technology.

(3) Chronological developments in the field of biotechnology.

(b) Answer in brief : (any **three**) **6**

(1) Define plasmid vector.

(2) What is gene cloning ?

(3) What is oligonucleotide sequencing ?

(4) What is DNA vaccine ?

2 (a) Discuss the following : (any **two**) **12**

(1) Outline procedure for preparation of λ -cloning vector.

(2) Polymerase chain reaction.

(3) Functions of DNA ligase and Alkaline phosphate in r-DNA technology.

(b) Define / explain in brief : (any 3) 6

(1) Draw genetic map of any plasmid cloning vector.

(2) What is bacteriophage library ?

(3) What is insertion vector ?

(4) Name the enzymes used in PCR.

3 (a) Describe the following : (any **two**) 11

(1) Molecular cloning in higher animals.

(2) Agrobacterium mediated gene transfer in plants.

(3) Microinjection and liposome mediated gene transfer.

(b) Define/explain in brief : 6

(1) What is back-mutation ?

(2) What is particle bombardment ?

(3) What are restriction linkers ?

4 (a) Answer any **one** of the following : 11

(1) What is r-DNA technology ? Enlist various application sectors of Industrial biotechnology and explain its role in food and industrial products formation.

(b) Define/answer in brief : (any **three**) 6

(1) What is sparger ?

(2) Name the organism used for the production of Acetone-Butanol fermentation.

(3) What is GMO ?

(4) What is pilot scale fermenter ?