



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**)
- (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 ?