

TDC Even Semester Exam., 2019

BIOTECHNOLOGY

(Pass)

(4th Semester)

Course No. : BTCP-401

(Recombinant DNA Technology and Immunology)

Full Marks : 35*Pass Marks* : 12*Time* : 2 hours*The figures in the margin indicate full marks for the questions*

1. (a) What are restriction enzymes? How do these enzymes participate in recombinant DNA technology? 2+3=5
- (b) Write the role of DNA ligase in rDNA technology. 2

OR

2. (a) What is the importance of plasmids for the rDNA technology? 2

(b) Write notes on the following : $2\frac{1}{2}+2\frac{1}{2}=5$

(i) YAC

(ii) Cosmid

3. Describe the process of purification of plant DNA. Add a note on safety measures to be adopted during the purification process. 5+2=7

OR

4. (a) With example, describe the methods of expression of gene of interest in prokaryotes. 5
- (b) Add a note on its advantages. 2
5. Describe about the critical factors affecting the success of cloning and gene expression. 7

OR

6. Write notes on the following : $3\frac{1}{2}+3\frac{1}{2}=7$
- (a) Gene cloning for production of protein
- (b) Construction of cDNA libraries
7. (a) What is antigen? Write the characteristics of antigen. Differentiate between epitope and paratope. 1+2+2=5
- (b) Define immunogenicity and immunogenes. 1+1=2

(3)

OR

8. (a) Give a comparative account of structure and functions of IgA, IgM, IgG, IgE and IgD. 6
- (b) Which immunoglobulin is the abundant class in the human body? 1
9. (a) What do you mean by antibody diversity? Write the importance of generation of antibody diversity. 1+2=3
- (b) What do you mean by phagocytes? Write the role of phagocytes in generating immunogenic response. 1+2=3
- (c) What is MHC? 1

OR

10. (a) Discuss the role of thymus in cell mediated immunity. 4
- (b) Write the functions of—
- (i) bone marrow;
- (ii) spleen. $1\frac{1}{2}+1\frac{1}{2}=3$

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