

M.Sc. (Zoology) Semester - 2 (CBCS) Examination**August/September -2020 [OLD COURSE]****BIOTECHNOLOGY AND IMMUNOLOGY (CORE)****Time: 2:00 Hours****Marks: 56****Instructions:**

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any four of the following questions.
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Q.1 Answer the following (any seven out of ten, each of **two marks)****14**

1. What is contribution of Karl Landsteiner.
2. Draw the structure of IgA.
3. Define biodegradation.
4. Comment on immobilized enzyme.
5. Enlist the animal tissue culture techniques.
6. What is recombination?
7. What is Ti plasmid?
8. Enlist one of media components used in plant tissue culture.
9. What is restriction enzyme? Mention its function.
10. What is vector?

Q. 2 Answer the following (any two out of three, each of **seven marks)****14**

1. Describe the basics principle and application of animal tissue culture.
2. Explain *ex-situ* bioremediation.
3. Explain the principle and application of immobilized enzyme.

Q.3 Answer the following**14**

1. Explain Cosmid with molecular application. [5]
2. Write a short note on restriction enzymes. [5]
3. Explain DNA isolation techniques in detail. [4]

OR**Q. 3 Answer the following (each of **seven** marks)****14**

1. Explain PUC18 in detail.
2. Write short note on genetic engineering.

Q.4 (A) Answer the following (any two out of three, each of **five marks)****10**

1. Discuss important steps involved in plant tissue culture.
2. What is tissue culture? Explain types of plant tissue culture.

Q.4 (B) Answer the following (any One out of two)**04**

1. Explain basic principle of plant tissue culture.
2. Describe advantage and application of PTC.

Q.5 Answer the following (any two out of four, each of **seven marks)****14**

1. Write a note on inflammation.
2. Differences between polyclonal and monoclonal antibodies.
3. What is hybridomas? How monoclonal antibodies are produced by hybridoma technology?
4. Write short notes on Adjuvants.
