CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN
SEMESTER END EXAMINATION, AUGUST 2020

Semester VI ZOD-104: Animal Biotechnology

Total Marks: 30 Date: 06/08/2020 Duration: 2 hrs Total No. of pages: 2

Instructions: 1. All questions are compulsory.
2. Figures to the right indicate marks allotted to the question.
3. Illustrate your answers wherever necessary.

Q.1. Answer **ANY FIVE** of the following: (5x2)

1. A wine maker, and a molecular biologist who has developed a recombinant vaccine, both claim themselves to be biotechnologists. Who is right? Justify your answer.
2. Write a note on Shuttle Vectors.
3. Illustrate the Lytic cycle of a bacteriophage
4. What are the features of a good vector?
5. Describe the role of $CaCl_2$ in preparation of competent cells.
6. Why is cDNA called "functional DNA"?
7. Why is the Sanger method of DNA sequencing preferred over the Maxam-Gilbert Method?
8. What are transgenic animals? Mention any four applications.

Q.2. Answer **ANY FOUR** of the following: (4x5)

1. The restriction enzymes that are used in construction of recombinant DNA molecule are endonucleases which cut the DNA at 'specific recognition sequence'. What would be the disadvantage if they would not cut the DNA at specific-recognition sequence?

2. You are interested in producing a mass quantity of novel eukaryotic proteins. You have to produce recombinant yeast colonies that express said proteins. Suggest the vector you can use along with its features to achieve this result providing the reasoning for your suggestion.

3. Explain the structure of bacterial cell with the aid of a neatly labelled diagram.

4. At a crime scene, blood sample of a suspect has been found. However, the quantity of DNA in the sample is too less to accurately determine the individual. How can you amplify the sample to identify the suspect?

5. A pUC plasmid containing a novel gene has been used to transform *E. coli* cells. How will you determine the colonies that contain the gene of interest?

6. You want transfer a gene of interest from an individual of Sprague-Dawley rat into another individual of Wistar rat. What method would you use to ensure that the progeny are transgenic?