

**CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN, NUVEM-GOA**  
**SEMESTER END EXAMINATION (ONLINE MODE), JULY 2021**

Semester: **VI B.Sc.**

Subject: **BOTANY – DSC**

Course name and Code: **Molecular Biology & Genetic Engineering – BOC 109**

Max. Marks: **30**

Date: **12/07/2021**

Duration: **2 Hours**

Total No. of pages: **01**

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**Instructions:** 1. All questions are *compulsory*.

2. Figures to the **right** indicate **maximum** marks allotted to the question.

3. Draw labeled diagrams **wherever** necessary.

**Q. I.** Answer **any five** of the following in brief:

(5 x 2 Marks = 10)

- i. What is a promoter region? List the promoter sites in prokaryotes.
- ii. List the characteristics of the two bacterial strains used in Griffith's experiment.
- iii. Give the role of any two enzymes involved in translation.
- iv. What are ribozymes? Give any two applications of ribozymes.
- v. List the steps in genetic engineering.
- vi. What is bacterial competence?
- vii. Mention the characteristics of Taq DNA polymerase enzyme.
- viii. List the advantages of humulin over animal insulin.

**Q. II.** Answer **any four** of the following:

(4 x 5 Marks = 20)

1. Write a note on 'Types of DNA'.
2. Explain the semi-discontinuous model of DNA replication.
3. What are split genes? Briefly explain alternative splicing with the support of a diagram.
4. Explain the steps involved in Sanger and Coulson's method of DNA sequencing.
5. Explain the steps in construction of a cDNA library.
6. What are transgenic plants? With the help of a suitable example, explain the production of insect resistant plants.

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