

**CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN,
NUVEM-GOA
SEMESTER END EXAMINATION, JANUARY 2022**

Semester: V	Course name & Code: ZOC 107 Molecular Biology and Evolution	Date:	Duration:	Total No of pages: 02
Total marks: 80				

*Instructions: 1. All questions are compulsory
2. Figures to the right indicate marks
3. Draw neat labelled diagrams wherever necessary*

Q1: Answer any FOUR of the following: **(4x4 = 16 marks)**

- i. Briefly present the causes and repair mechanism of Pyrimidine dimers.
- ii. Write a short note on eukaryotic RNA polymerases.
- iii. Differentiate between prokaryotic and eukaryotic translation.
- iv. Briefly discuss the 'Wobble hypothesis'.
- v. List out the four stages of Protein synthesis.
- vi. Explain the initiation stage of Translation in eukaryotes.

Q2. Answer any FOUR of the following: **(4x4 = 16 marks)**

- a. Enlist the principles of organic evolution.
- b. Comment on the origin of the earth and its primitive atmosphere.
- c. Differentiate between 'somatic' and 'germinal' variations.
- d. Briefly explain 'Animal Association' adaptations.
- e. Explain 'Geographic Isolation' with a suitable example
- f. Justify the significance of fossils

Q3. A) Explain the process of DNA replication in Eukaryotes. **(6 marks)**

OR

A) Elaborate on the post transcriptional addition of 5' cap and Poly A tail of mRNA. **(6 marks)**

B) Write a note on RNA splicing. **(6 marks)**

Q4. A) Describe the process of tRNA charging.

(6 marks)

OR

A) Explain the mechanism of action of Puromycin. Add a note on Streptomycin and Chloramphenicol.

(6 marks)

B) Discuss the regulatory mechanism of 'Catabolite Repression' of the Lac Operon.

(6 marks)

Q5. A) Elaborate on the Morphological species concept with a note on its drawbacks.

(6 marks)

OR

A) Discuss the evolutionary idea contributed by Darwin.

(6 marks)

B) Define mutations. Discuss the various types of mutations.

(6 marks)

Q6. A) What are isolating mechanisms? Explain post- mating mechanisms.

(6 marks)

OR

A) Discuss Convergent and Divergent adaptations with suitable examples.

(6 marks)

B) What is a Mendelian population? State the attributes of a population.

(6 marks)

X