

**CARMEL COLLEGE OF ARTS, SCIENCE & COMMERCE FOR WOMEN  
NUVEM-GOA**

**B.Sc. CBCS Semester V Examination, January 2021**

**Subject Code: ZOC 107      Subject name: Molecular Biology and Evolution**

**Total Marks: 80      Duration: 2 hrs      Total No. of Pages:**

---

*Instructions: 1. All questions are compulsory.*

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

*3. Illustrate your answers wherever necessary.*

**Q.I. Answer ANY FOUR of the following: (4x4)**

1. Elaborate on the types of nitrogenous bases found in DNA and RNA.
2. State the types of RNA polymerases found in Eukaryotic cells and the type of RNA they transcribe.
3. Write a short note on the concept of 'Spilt Genes'.
4. Briefly explain the 'Wobble Hypothesis'.
5. State four differences between Prokaryotic and Eukaryotic Translation.
6. What is Genetic Imprinting? State an example of the same.

**Q. II. Answer ANY FOUR of the following: (4x4)**

1. With a suitable example, explain the mechanism of mega evolution
2. What are sibling species? State their significance in evolution.
3. Enumerate any four characteristics of mutations.
4. Elaborate on Animal association adaptations.
5. Discuss co-adaptations.
6. State the significance of fossils.

Q.III

A) Explain Initiation and Elongation phase of DNA Replication in Eukaryotes. (6)

OR

A) What is RNA splicing? Add a note on Self splicing Introns. (6)

B) Explain in detail any two post transcriptional modification of mRNA. (6)

Q. IV

A) Write a note on tRNA Charging. (6)

OR

A) Write a note on inhibitors of protein synthesis. (6)

B) Discuss the regulation of lac operon in E.coli. (6)

Q.V

A) Compare Lamarck's and Darwin's theories of evolution. (6)

OR

A) Elaborate on the three species concepts with a note on their drawbacks. (6)

B) Summarise the causes of variation. (6)

Q.VI

A) What are isolating mechanisms? Explain Post- mating mechanisms. (6)

OR

A) Discuss Convergent and Divergent adaptations with suitable examples. (6)

B) Explain the Hardy Weinberg's law of equilibrium. (6)