**Reg. No. \_\_\_\_\_\_\_\_**

**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examination - June 2011**

**Subject Title: MOLECULAR EVOLUTION AND PHYLOGENY Time: 3 hours**

**Subject Code: 09BI214 Maximum Marks: 100**

#### **Answer ALL questions**

**PART – A (10 x 1 = 10 MARKS)**

1. What is population genetics?

2. How do you explain consensus trees?

3. Explain the term Polytomy.

4. What are Ultrametric trees?

5. What is minimum evolution tree?

6. What are orthologous and paralogous genes?

7. Explain the concept “The molecular clock”.

8. What is selection pressure?

9. What are gene trees?

10. Define organismal phylogeny.

**PART – B (5 x 3 = 15 MARKS)**

11. List the forces which challenge allele frequencies.

12. Give an account on the use of bootstrap in constructing a phylogenetic tree.

13. Write short notes on maximum parsimony method.

14. Write a note on natural selection.

15. Explain the rates of diversification phylogeny.

**PART – C (5 x 15 = 75 MARKS)**

16. Explain the evolutionary changes in nucleotide sequences.

(OR)

17. Write an essay on the Archeology of genome.

18. List and explain the various terminologies used in a phylogenetic tree.

(OR)

19. Explain in detail about the concept of “Universal phylogeny” with example.

20. Write in detail about the methods of reconstruction.

(OR)

21. Explain about the various measures of genetic change.

22. Explain functional constraints.

(OR)

23. Discuss in detail about the molecular clock hypothesis.

24. Explain in detail about the various tools to study Host parasite cospeciation.

(OR)

25. Explain the role of phylogeny in Molecular epidemiology with reference to viral epidemics.