**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: BIOPHYSICS Time: 3 hours**

**Subject Code: BC208 Maximum Marks: 100**

#### **Answer ALL questions**

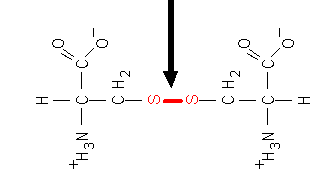
**PART – A (10 x 1 = 10 MARKS)**

1. List out the various structural levels of proteins.

2. Which bond stabilizes the primary structure of a protein?

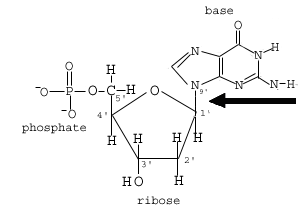
3. Give any two examples for secondary structure proteins.

4. Write the name of the bond indicated in the given below figure.



5. Which base is complementary base for uracil?

6. Write the name of the bond indicated in the given below figure.



7. What is unimolecular reaction?

8. Give the rate equation for the reaction X + Y → Z.

9. Define Svedberg unit.

10. Which is the most prominent technique in predicting the protein structure?

**PART – B (5 x 3 = 15 MARKS)**

11. Define a primary structure protein.

12. What is φ and ψ angle?

13. Define ribose puckering.

14. What is steady state kinetics?

15. Outline the significance of ultracentrifugation technique.

[P.T.O]

**PART – C (5 x 15 = 75 MARKS)**

16. What is biophysics? Briefly explain the basic strategies applied in the area of biophysics. (2+13)

(OR)

17. Elaborate the secondary and tertiary structure proteins with suitable examples.

18. What is Ramachandran plot? Explain its mechanism in the determination of secondary structure proteins. (2 + 13)

(OR)

19. Elaborate the stabilization of tertiary structure of proteins.

20. Describe the structural characteristics of DNA.

(OR)

21. Write short notes on: a. Base pairing and stacking (5)

b. Techniques adopted for predicting protein structures (10)

22. Explain the mechanism of action of ribonuclease as a case study for kinetics.

(OR)

23. Write short notes on: a. Relaxation spectrometry (7)

b. Catalytic efficiency and bimolecular reaction (4 + 4)

24. Discuss in detail the principle and instrumentation of X-ray crystallography.

(OR)

25. Write short notes on: a. Principle of electron microscopy. (5)

b. Instrumentation of neutron and light scattering. (5 + 5)