LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc., DEGREE EXAMINATION – ADV.ZOOLOGY & BIO TECH. AND PLANT BIOLGY & BIO. TECH.

THIRD SEMESTER – **NOVEMBER 2017**

16UCH3AL03 – GENERAL CHEMISTRY FOR BIOLOGY-I

Date: 09-11-2017   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

Part-A

*Answer **ALL** questions.*   (10 x 2 = 20)

1. What are carcinogens? Give two examples.
2. How are accuracy and precision expressed?
3. Why is the boiling point of acetic acid higher than propan-1-ol?
4. How are adenine and thymine bonded in nucleic acids?
5. Mention the names of sex hormones.
6. Write any two sources of vitamin C.
7. Define rate of a reaction.
8. What is a pseudo unimolecular reaction? Give an example.
9. Differentiate between molarity and normality.
10. Define ionic product of water.

Part-B

*Answer any **EIGHT** questions.*   (8 x 5 = 40)

11. What are the precaution required in handling hazardous chemicals?
12. Describe the methods to eliminate and minimize the errors in data analysis.
13. Explain the principle of a column chromatography.
14. Explain the hybridization and geometry of methane and water.
15. Discuss the structure of hemoglobin.
16. Explain the crystal structure of potassium chloride.
17. Explain the functions of adrenaline.
18. Discuss the hydrolysis of fats.
19. Enumerate the types of catalysis with suitable examples.
20. Write the factors affecting the rate of a reaction.
21. How is a standard solution prepared? Give an example.
22. What are strong acids and weak acids? Give an example.

Part-C

*Answer any **FOUR** questions.*   (4 x 10 = 40)

23. How are chemicals segregated and stored in cabinet and shelf?
24. a) What are the applications of thin layer chromatography? (5)
    b) Discuss the types of hydrogen bonding with suitable examples. (5)
25. Discuss the geometrical and optical isomerism in octahedral complexes with suitable examples.
26. Explain the structures and functions of vitamin K and E.
27. a) Write the differences between order and molecularity of a reaction. (4)
    b) Derive an expression for the rate of first order reaction. (6)
28. Explain the principle and procedure involved in the titration between oxalic acid and $KMnO_4$.

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