



**MAR IVANIOS COLLEGE (AUTONOMOUS)**  
**THIRUVANANTHAPURAM**

Reg. No. :.....

Name :.....

**Fifth Semester B.Sc. Degree Examination, November 2016**

**First Degree Programme under CBCSS**

**Open Course: Chemistry – I**

**AUCH581: Essentials of Chemistry**

Time: 3 Hours

Max. Marks: 80

**SECTION – A**

*Answer ALL questions in a word or one or two sentences.*

1. Write down the electronic configuration of copper.
2. Name the element formed by the emission of a beta particle from thorium.
3. What is the IUPAC name of RDX ?
4. Who discovered penicillin ?
5. The deficiency of which vitamin causes scurvy ?
6. Give the expansion of LDPE.
7. What is the monomer of natural rubber ?
8. Which is the major gas responsible for green house effect ?
9. Name the compound responsible for temporary hardness ?
10. What is the chemical name of zeolite ?

**(10 × 1 = 10 Marks)**

**SECTION – B**

*Answer any EIGHT questions, not exceeding a paragraph.*

11. What is the principle of hydrogen bomb ?
12. Give the chemical and structural formula of aspirin.
13. What is an azo dye ? Give an example.
14. How is nylon – 66 prepared ?
15. What is vulcanization ? What is its use ?
16. Give the names and preparation of two synthetic rubbers.

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17. What is the polymerisation product of caprolactam ? Give equation for the polymerization reaction.
18. What is a nucleoside ?
19. What is riboflavin? Why it is called lactoflavin ?
20. State and explain Aufbau principle.
21. How fertilizers and pesticides cause soil pollution ?
22. Distinguish between BOD and COD.

**(8 × 2 = 16 Marks)**

### **SECTION – C**

*Short essay type : Answer any SIX questions.*

23. Bring out the differences between orbit and orbital.
24. State and explain with examples the group displacement law.
25. What is meant by polymerization ? Give one reaction each for addition polymerisation and condensation polymerisation.
26. What are silicones? How they are prepared ?
27. Discuss the classification of polymers on the basis of structure.
28. What are the differences between RNA and DNA ?
29. Give an account of the classification of hormones.
30. Explain the factors affecting enzyme action ?
31. What are vitamins ? How are they classified ?

**(6 × 4 = 24 Marks)**

### **SECTION – D**

*Long essay type : Answer any TWO questions.*

32. (a) Discuss Bohr's theory highlighting its merits and demerits.  
(b) What are quantum numbers ? Give the significance of each.
33. (a) Describe the applications of radioactivity.  
(b) Derive an expression for decay constant of a radioactive material.
34. (a) What are synthetic detergents ? Explain the different types of synthetic detergents.  
(b) Write notes on the cleansing action of (i) soaps and (ii) detergents.
35. (a) What is acid rain ? Describe its formation ?  
(b) Write a note on the importance of ozone layer, its depletion and the hazards associated with it.

**(2 × 15 = 30 Marks)**

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