

Roll No. _____

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SIIS-O 60 A-16
B.Sc. IInd Semester Degree Examination
CHEMISTRY
Paper : II
(Old)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

The Question paper has three parts, A, B, and C. Each section contain the questions from Inorganic, organic and physical chemistry.

Section - A

I. Answer all the questions:

(15×1=15)

1. Write structure & Borazine
2. What is meant by diagonal relationship?
3. What are fluorocarbons?
4. Write the structure of XeF_4
5. What are Fullerenes?
6. What are isolated dienes?
7. What is ozonolysis?
8. What is resonance energy?
9. What are Arenes?
10. State saytzeff rule

11. What is a triple point?
12. Evaluate $\log_4 256$.
13. What are input and output devices in a computer.
14. What is second order reaction?
15. Define phase?

Section - B

II. Answer any Five of the following :

(5×5=25)

16. Write a note on structure and bonding in XeF_2
17. Explain the diagonal relationship between lithium and magnesium.
18. Describe Kekule structure of Benzene.
19. Give the mechanism of dehydration of alcohols.
20. Write a note on elementary account of transition theory.
21. a) Explain the relative reactivity of the halogen atom in alkyl halides and aryl halides. (3)
b) What do you mean by permutation and combination? (2)
22. a) Solve the following :
i) $8!$ ii) $\frac{4!}{3! \times 2!}$ (3)
b) Plot the graph for a linear equation $Y = mx + c$ (2)

Section - C

III. Answer any Four of the following :

(4×10=40)

23. a) Describe the basic properties of halogens (5)
b) Write a note on biological role of calcium. (5)

24. a) Discuss the structure of Diborane (5)
b) Discuss the anomalous behaviour of Beryllium. (5)
25. a) Explain the mechanism of SN^2 reaction taking the hydrolysis of methyl bromide as an example. (5)
b) Give two methods of synthesis of 1,3 - Butadiene (5).
26. a) Explain the mechanism of Nitration of Benzene (5)
b) Give any two methods of preparation of alkynes. (5)
27. a) Derive an expression for the velocity constant of a second order reaction when $a = 6$. (6)
b) Explain the Lindemann's theory. (4)
28. a) Explain the application of phase rule to sulphur system. (6)
b) Define component and degree of freedom. (4)
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