



B.Sc. II Semester Degree Examination, June - 2018

CHEMISTRY

Paper No : II

(New)

Time : 3 Hours

Maximum Marks : 80

Instructions to Candidates:

The question paper contains 4 sections and answer all the 4 sections A, B, C and D as per instructions.

Section - A

Answer any TEN of the following :

(10×2=20)

1. Give any two uses of S-block elements.
2. What are inter halogen compounds? Give a preparation of TF_5 .
3. Define bond order.
4. Write the structure of diborane.
5. Calculate the angle strain in cyclopentane.
6. Why alkynes are acidic in nature?
7. What are cumulated dienes? Give one example.
8. State Huckel's rule.
9. Define order & molecularity of a reaction.
10. What are parallel reaction give an example?
11. What are liquid crystals? Give an example.
12. Give any two applications of colloids.

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Section - B

Answer any **two** of the following :

(2×10=20)

13. a) Discuss the comparative study of alkali and alkaline earth metals with respect to density, melting points and boiling points and flame colouration. (6)
- b) Write the preparation and structure of IF_3 and IF_7 . (4)
14. a) According to VSEPR theory explain the structures of BF_3 and PCl_5 . (6)
- b) Write a note on Vander Waal's interactions. (4)
15. a) Discuss the structure and bonding in XeF_6 and XeO_3 . (6)
- b) Write a note on characteristic properties of oxides and hydroxides of alkali metals. (4)

Section - C

Answer any **TWO** of the following :

(2×10=20)

16. a) How are alkanes synthesized by
- i) Kolbe's reaction
- ii) Corey - House reaction. (6)
- b) Explain the orientation effect of nitrobenzene. (4)
17. a) Give any two methods of synthesis of alkynes. (6)
- b) Write a note on Sachse - Mohr theory of strain less rings. (4)
18. a) Give an account of Baeyer's strain theory. (6)
- b) Explain conjugated and cumulative dienes with examples give a method of synthesis of 1,3 - butadiene. (4)

Section - D

Answer any **two** of the following :

(2×10=20)

19. a) Derive an expression for the velocity constant of a second order reaction when $a \neq b$. (6)
- b) Write a note on parallel and consecutive reaction. (4)



20. a) Discuss briefly intermolecular forces in liquids. (6)
b) Write a note on electro osmosis. (4)
21. a) Give the determination of order of a reaction by (6)
i) Differential rate equation method
ii) Graphical method.
- b) Give the structural differences between solids, liquids and gases. (4)
