SECTION C — (3 × 15 = 45)

Answer any THREE questions.

16. Explain Huckel's rule of aromaticity in Five, Six, Seven and Eight membered ring system with an example. (4+4+4+3)

17. Discuss the axial chirality of Biphenyl, Allenes and Spiranes. (5+5+5)

18. Explain

    (a) Neighbouring group participation.

    (b) Substitution at Vinylic carbons. (10+5)

19. Discuss about

    (a) Cope elimination

    (b) Darzens glycidic ester condensation. (5+10)

20. Explain the following:

    (a) Classification of Pericyclic reaction

    (b) Claisen Rearrangemet. (10+5)

S.No. 7400 **PN 15 CH 1**

(For candidates admitted from 2015–2016 onwards)

M.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Part III — Chemistry

ORGANIC CHEMISTRY

Time : Three hours Maximum : 100 marks

SECTION A — (10 × 2 = 20)

Answer ALL questions.

1. What is Antiaromaticity? Give an example.

2. Match the following:

(i)	Pyridine	–	(a) Non Aromatic
(ii)	Tropylium cation	–	(b) Anti aromatic
(iii)	Cyclooctatetraene	–	(c) Aromatic
(iv)	Cyclopentadienylcation	–	(d) Homo Aromatic

3. Why trans (e, e) decalin is more stable than cis (a, e) decalin.

4. What is stereospecific synthesis?

5. Write down the neighbouring group effectiveness order of halogens in aliphatic nucleophilic substitution reaction.

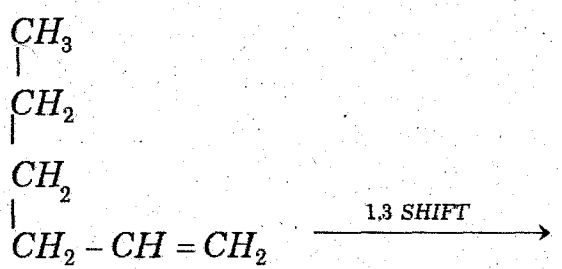
6. What are protic and aprotic solvents? Give examples.

7. State Bredt's Rule.

8. Define Hoffmann rule.

9. State the Woodward and Hoffmann selection rule for electro cyclic reaction.

10. Predict the product.



SECTION B — (5 × 7 = 35)

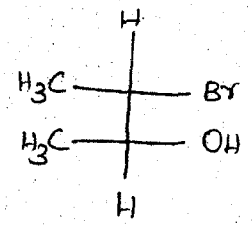
Answer ALL questions, choosing either (a) or (b).

11. (a) Discuss the aromaticity in Annulenes. (7)

Or

(b) Explain Hammond's postulate with its applications. (7)

12. (a) How will you convert the following Fischer projection into Newmann and Sawhorse. (7)



Or

(b) Discuss the various methods of determining configuration of a molecule. (7)

13. (a) Explain Taft equation. (7)

Or

(b) Explain the mechanism of S_N^2 reaction. (7)

14. (a) Discuss Knoevenagel condensation reaction. (7)

Or

(b) Explain the mechanism of E1 reaction. (7)

15. (a) Write a note on Paternobuchi rection. (7)

Or

(b) Discuss [4+2] cyclo addition reactions with suitable example. (7)