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**PAR-003-010202**

Seat No. \_\_\_\_\_

**M. Sc. (Sem. II) (CBCS) Examination**

**August / September - 2020**

**Organic Chemistry : Paper - (C) - 202**

*(Old Course)*

**Faculty Code : 003**

**Subject Code : 010202**

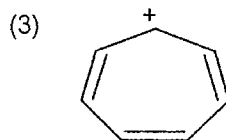
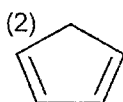
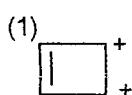
Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions :** (1) All the questions carry equal Marks.  
(2) Attempt five questions in all.

1 Answer any **seven** of the following briefly : 14

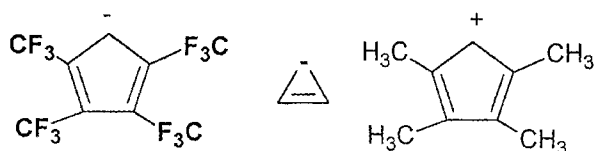
- (a) Enlist the condition for aromatic behavior of compounds.
- (b) Explain Grothuss Draper laws of Photochemistry.
- (c) Write Cope rearrangement with suitable example.
- (d) Define and the pericyclic reaction with suitable example.
- (e) Discuss the aromatic character of cyclopropane and their cation and anion.
  - (1) Write the Craig's empirical formula and explain with example.
- (f) Give at least two differences between excited singlet and triplet.
- (g) Arrange the following in decreasing order of their stability :



- (h) Explain Fluoresce and Phosphoresce in photochemistry.
- (i) Explain Homo aromatic compound with suitable example.
- (j) Define the terms: HOMO and Photochemically allowed reaction.

2 Answer any **two** of the Following : 14

- (a) Correct the acidity order of following and justify your answer.



- (b) Write the synthesis of Tropolone and discuss their aromatic behavior.
- (c) Give a brief account on azulene and their aromatic behavior.

3 Answer the following : 14

- (a) Discuss (4+2) cyclo addition reaction with PMO approach.
- (b) Explain electro-cyclic reaction of 1,5-cis dimethyl-1,3,5-hexatriene.

OR

3 Answer the following : 14

- (a) Discuss the analysis of sigma tropic rearrangement with the help of PMO approach.
- (b) Give an account of Group-transfer reaction with suitable example.

4 Answer the Following : 14

- (a) Draw the Jablonski diagram and explain all reductive and non reductive processmention in detail.
- (b) Explain by giving example, Photo-isomerization, Photo-addition and photooxidation reaction.

**5** Answer any **two** of the following : **14**

- (a) Discuss the aromatic behavior for poly aromatic compounds.
  - (b) Draw the molecular orbital diagram of 1,3, butadiene, explain its symmetry and derive the rule for both conditions.
  - (c) Explain Huckel Mobius method by citing example.
  - (d) Discuss aromatic behavior at  $14\pi$  electron systems by citing at least two examples.
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