BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION)

CLASS: IMSc   SEMESTER: III
BRANCH: CHEMISTRY   SESSION: MO/2022
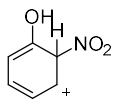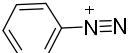
SUBJECT: CH216 ORGANIC CHEMISTRY-II

TIME: 2 HOURS   FULL MARKS: 25

INSTRUCTIONS:
1. The total marks of the questions are 25.
2. Candidates attempt for all 25 marks.
3. Before attempting the question paper, be sure that you have got the correct question paper.
4. The missing data, if any, may be assumed suitably.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

				CO	BL
Q1	(a)	What do you mean by anti-Markonikov addition? Give example.	[2]	CO1	1
Q1	(b)	For the addition of unsymmetrical reagent to unsymmetrical alkene discuss the Markonikov rule with example.	[3]	CO2	2

Q2 (a) Predict with reasoning which compounds in each of the following pairs has   [2]   CO2   1
        the higher dipole moment.
        (i) $CH \equiv C\text{-}CH_2Cl$ (ii) $H_3C\text{-}C \equiv C\text{-}Cl$

Q2 (b) Draw the resonating structures for the following compounds and indicate in   [3]   CO1   2
        each case the relative contributions of the resonating structures

Q3 (a) Between the following two diazonium cations, which one undergoes   [2]   CO2   2
        nucleophilic displacement of nitrogen at a faster rate? Explain.

Q3 (b) Given $K_H/K_D = 7.0$. Explain the below reaction indicating the rate determining   [3]   CO1   3
        step.

Q4 (a) Write the reasons of favoring ANTI elimination over the SYN in E2 pathway?   [2]   CO1   1
Q4 (b) Why is the rate equation of solvolytic E1 and E2 identical? How do they   [3]   CO1   2
        distinguish?

Q5 (a) Explain one example of favoring SYN elimination.   [2]   CO2   2
Q5 (b) How does the size of base influence the percentage of Hofmann product? Give   [3]   CO2   3
        example.