
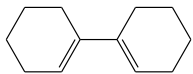
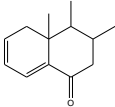
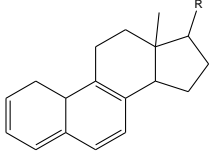


Name:			
Enrolment No:			
UPES End Semester Examination, May 2023			
Course: Organic Chemistry V Program: B.Sc (H) Chemistry Course Code: CHEM 3004		Semester: VI Time : 03 hrs. Max. Marks: 100	
Instructions: Read all the below mentioned instructions carefully and follow them strictly. 1) Mention Roll No. at the top of the question paper. 2) Internal choice is given in Q. no. 10. 3) ATTEMPT ALL THE PARTS OF A QUESTION AT ONE PLACE ONLY.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	What are prerequisite for a colored compound to act as a dye?	4	CO3
Q2	How will you distinguish between Glucose and Fructose?	4	CO3
Q3	Discuss the classification of polymers based on thermal treatment.	4	CO1
Q4	Two isomeric compounds A and B having Molecular formula C ₃ H ₆ O shows IR band A at 3300 cm ⁻¹ and 1640 cm ⁻¹ and B at 1710 cm ⁻¹ . Predict structure of A and B.	4	CO2
Q5	A polymer is soluble in water, explain, the detail of polymerization technique that you would suggest.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q6	Compare polyaddition polymerization with chain growth and step growth polymerization.	10	CO1
Q7	Explain, the effect of substitution on $\pi \rightarrow \pi^*$ transition in terms of Bathochromic shift and Hypsochromic shift.	10	CO2
Q8	Give the reactions supporting the linkage of C1 and C5 in ring structure of Glucose.	10	CO3
Q9	Give preparation, properties and application of phenolphthalein and Indigotin	10	CO3
SECTION-C (2Qx20M=40 Marks)			
Q10 a	Give preparation, properties and application of LDPE and HDPE OR	10	CO1

b	<p>Taking example, explain the free radical mechanism of polymerization.</p> <p>Depict important characteristic of polycondensation polymerization</p> <p>OR</p> <p>Give reasons:</p> <ol style="list-style-type: none"> Electric fitting is made up of PVC. Suspension polymerization is known as bead polymerization. Elemental composition of Polymers are different from monomers in case of condensation polymerization. Free radical polymerization is done in the presence of inert atmosphere. Addition polymerization is also known as chain growth polymerization Initiation can be done by heat, light or catalyst Inhibitor are added to monomers during storage and transportation Isotactic PP is used for making hospital accessories Molecular weight of polymers is expressed as average. Thermosets cannot be remolded 	10	
Q11 a	<p>Calculate λ_{\max} for the given compounds</p> <p>B</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <p>Calculate the expected number of signal in ¹H NMR spectra of the following</p> <ol style="list-style-type: none"> Allyl alcohol 2- Bromo propene 2 chloro propane Ethyl alcohol Para ethyl xylene <p>c</p> <p>Explain, in detail Anisotropic effects in benzene and alkene.</p>	<p>1+2+2</p> <p>5</p> <p>10</p>	<p>CO2</p>

Base values:

Butadiene System=217 m μ

Heteroannular conjugated diene = 215 m μ

Homoannular conjugated diene=253 m μ

α,β unsaturated ketone =215 m μ

Homoannular conjugated diene in α,β unsaturated ketone= 39 m μ

Extended conjugation= 30 m μ

Alkyl substituent/RR/exocyclic double bond = 5 m μ

Substituents	α	β	γ	δ
Alkyl substituent or RR	10	12	18	18
OH	35	30	50	50