CT3 important questions-1

Chemistry (SRM Institute of Science and Technology)

1. **Explain the Dieckmann condensation reaction mechanism with example.**
2. **Explain the reaction of cyclopropane with H_2 and Cl_2**
3. **Give Addition reaction products formed when cyclopropane reacts with the followings**
    - **Halogens**
    - **HI**
    - **Sulphuric acid**
    - **Hydrogen**
4. **Explain oxidation reduction reaction of the following reagents with expels**
    - **K2Cr2O7**
    - **KMnO4**
    - **LiAlH4**
    - **NaBH4**
5. **Explain SN1 mechanism taking an example.**
6. **Explain SN2 mechanism taking an example.**
7. **Explain E1 mechanism taking an example.**
8. **Explain E2 mechanism taking an example.**
9. **How polymers are classified based on origin, structure, and nomenclature. Give examples.**
10. **Discuss addition polymerization, co-polymerization, and condensation polymerization with examples. Discuss the different types of tacticity of polymer with examples. Explain the difference between isotactic, syndiotactic, and atactic polymers with examples.**
11. **How do crosslinked polymer and linear polymer differ? Give an example for each.**
12. **Discuss the difference between thermoplastic and thermosets. Suggest the product when 1,3-butadiene reacts with (a) acrylonitrile and (b) styrene**
13. **Write notes on conducting polymers. Give two examples with their structure.**
14. **Discuss the preparation (reaction), properties (two), and use (two) of any one of the Conducting polymers. Explain n and p doping in conducting polymer. Write down the application of conducting polymers.**
15. **Discuss the n and p doping mechanism of conducting polymer with examples.**
16. **Give the preparation, properties, and use of any two of the conducting polymers and draw their chemical structures. Discuss extrinsically conducting polymer.**
17. **Discuss the preparation (reaction), properties (two), and use (two) of the following polymers.**
    - **Synthetic rubber**
    - **Polystyrene (PS)**
    - **Polyacetylene**
    - **Teflon (PTFE)**
    - **polyvinyl chloride (PVC)**
    - **Nylon 6,6**
    - **Nylon**
    - **Polyurethane**
    - **Polypropylene**
    - **PET**
18. **Define the degree of polymerization and functionality.**
19. **Compare addition polymerization and condensation polymerization with examples.**
20. **Compare natural and synthetic rubbers.**
21. **Derive Bragg's law of diffraction.**
22. **Compute the miller indices for a plane intersecting at**
    - **x= - 1 y=1/3 z=3/4**
    - **x= α(infinity) y=1/2 z=1**
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23. **What is XPS principle? Draw the neat diagram and explain all the components. Give two application of XPS.**