

1. Which element is not part of the composition of petroleum
  - a. Phosphorus
2. Which aromatic not in petroleum
3. Which hydrocarbon not part of composition of petroleum
4. What is sweet/sour crude oil
  - a. Comment on amount of sulfur present
5. Which process is used to separate oil - fractionation
6. What are the end products of fractionation
  - a. 5 products + applications
7. Why do we blend gasoline
8. What is petroleum wax, how to make, and 5 applications
9. How many types of cracking
  - a. Thermal and catalytic
10. Mechanism of thermal cracking
  - a. radical
11. Difference between delayed cooking, thermal cooking, etc
12. How many types of catalytic processes
  - a. Describe all 3
  - b. What catalysts are used is important
13. In fcc cracking what is nasty vessel called
14. What kind of catalysts used in reforming
15. Discuss types of naphtha based on carbon content
16. Choose which process is part of catalytic reforming
17. Show product of isomerism for this compound
18. Show product of aromatization isomerism for this compound
19. Discuss Hydrotreating, what impurities are removed
20. Poisoning of catalysts in hydrotreating
21. Read different hydrotreating processes
22. What is Naptha Grating
23. What is sour gas
24. End product of  $\text{CO}_2 + \text{H}_2\text{S}$
25. What is alkylation – catalyst, reaction, end product
26. Isomerisation vs alkylation diff
27. Polymerisation alkylation. Olefins vs Isobutyl olefins. RON
28. Liquid paraffin
29. Petroleum refinery in ind
30. Laboratory synthesis of benzene
31. Reactivity of Benzene. Applications
32. Toluene: preparation from benzene. Applications. Tnt prep, use. Separating hb from blood cells
33. Xylene from toluene and application
34. Phenol production with mechanism
35. Cumene
36. Phenol oxidation rxn
37. Phenol applications. Phenol pharmaceutical rxns
38. Styrene. Gas leak.
39. Phthalic acid synthesis. Anhydride. Catalyst used. Naphthalene