

AMDE23 PETROLEUM REFINING AND PETROCHEMICALS

UNIT-1 ORIGIN

- 1.1 Exploration and production of Petroleum, Types of crudes, composition, characteristics, Products Pattern, Indigenous and imported crudes.
- 1.2 Crude heating, primary distillation principles, separation of cuts, gaps / overlaps, stripping.
- 1.3 Desalting heat balance in distillation, energy input and recovery, vacuum distillation, types of trays, draw offs, intermediate product, and quality control.

UNIT-2 LUBE OIL AND WAX PROCESSING

- 2.1 Solvent extraction, dewaxing desilting, deasphalting, clay contacting, principles operating parameters, feed and product equalities and yields.
- 2.2 Types and functions of secondary processing, cracking, thermal cracking and visbreaking, different feed stocks, products, yields and qualities.

UNIT-3 FLUID CATALYTIC FEED STOCKS AND PRODUCT YIELDS AND QUALITIES

- 3.1 Catalyst and operating parameters.
- 3.2 Steam Reforming, Hydrogen, Synthesis gas, cracking of gaseous and liquid feed stocks, olefins, Diolofins, Acetylene and Aromatics and their separation.

UNIT-4 UNIT PROCESSES

- 4.1 Alkylation, oxidation, dehydrogenation, nitration, chlorination, sulphonation and isomerisation.

UNIT-5 POLYMERISATION

- 5.1 Models and Techniques, production of polyethylene,
- 5.2 PVC, Polypropylene, SAN, ABS, SBR, Polyacrylonitrile,
- 5.3 Polycarbonates, Polyurethanes, Nylon, PET

References Books:

1. Nelson W.L., "Petroleum Refinery Engineering", McGraw Hill Publishing Company Limited, 1985
2. Watkins, R.N., "Petroleum Refinery Distillation, second edition, Gulf Publishing Company, Texas 1981.