

लोक सेवा आयोग  
नेपाल इञ्जिनियरिङ्ग सेवा, केमिकल समूह, राजपत्राङ्क द्वितीय श्रेणीको  
(आन्तरिक र खुला प्रतियोगिता) लिखित परीक्षाको पाठ्यक्रम

द्वितीय पत्र: प्राविधिक विषय

1. Unit Process:
  - a. Nutration, Halogination, Oxidation, Hydrogenation, Esterification, Alkylaton
2. Thermodynamics:
  - a. Thermodynamic laws, its functions
  - b. General Equations of Equilibrium
  - c. Pressure Volume Temperature Relations of Fluids
3. Heat Transfer:
  - a. Conduction, Convection and Radiation
  - b. Temperature
  - c. Counterflow: Double-pipe exchangers
  - d. 1-2 Parallel counterflow: shell and tube exchangers
4. Mass Transfer:
  - a. Distillation
  - b. Evaporation
  - c. Crystallization
  - d. Extraction
5. Petroleum Technology:
  - a. Composition of Petroleum
  - b. Classification of refinery products
  - c. Cracking, performing, Isomerisation
6. Fuels:
  - a. Solid
  - b. Liquid
  - c. Gas
7. Plastic Technology:
  - a. Plastics and their definitions
  - b. Ingredients of plastics or moulding powders
  - c. Different classification of plastics and Resins, its manufacture
  - d. Use of plastics and resins in industry and engineering

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8. Cement Technology:
    - a. Definition of Portland cement, Raw materials and its manufacture in detail
    - b. Flow sheet diagram for cement manufacture, setting or hardening of cement and different theories
    - c. Specifications for Portland cement (Nepal Standard), Analysis of cement and its use
    - e. Lime, plaster of Paris, Gypsum- manufacture and its use
  9. Pulp and paper Manufacturing & its uses:
    - a. Raw materials for paper
    - b. Pulping methods
    - c. Different type of Paper
    - d. Paper quality and tests
  10. Oils and Fats:
    - a. Vegetable oils and fats
    - b. Hydrogenation of Oils
    - c. Fat splitting
    - d. Soap and Synthetic detergents
    - e. Lacquer oils
  11. Paints, Varnishes and Lacquers
    - a. Types of Paints and its Raw Materials
    - b. Paints Manufacture
    - c. Varnishes and its characteristics
    - d. Lacquers and its composition
    - e. Lacquer oils
  12. Natural and Synthetic Rubber
    - a. Classification of Rubber
    - b. Chemistry and Properties of natural Rubber
    - c. Synthetic Rubber, Rubber compounding
    - d. Rubber Reclaiming, Reclaiming Agents
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