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Council for Technical Education and Vocational Training
Office of the Controller of Examinations
Sanothimi, Bhaktapur
Regular/Back Exam-2077, Chaitra

Program: Diploma in Engineering ALL

Year: I / II [2008 to 2018]

Subject: Engineering Chemistry II

Full Marks: 60

Pass Marks: 24

Time: 3 hrs

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Attempt Any Six questions.

- 1.a) Define hardness of water. How can you remove permanent hardness of water by permutit process? What are the natural sources of water? [1+4]
- b) Describe in detail the manufacture process of nitric acid by Ostwald's process with well labeled diagram. [5]
- 2.a) Describe the manufacturing process of sulphuric acid by contact process (principle and diagram only). [2+3]
- b) Define acid rain. Explain the chemical fertilizer in detail. [2+3]
- 3.a) Explain the laboratory preparation of hydrochloric acid with required diagram. [5]
- b) What are the allotropes of carbon? Explain the structure of diamond. [5]
- 4.a) What do you mean by bleaching action of chlorine? What are effect of oxides of carbon on environment and human? [5]
- b) Describe the manufacture process of ammonia by Haber's process. [5]
- 5.a) Define alkaline earth metal. What are the chemical properties of alkaline earth metals? (Specially of calcium). [1+4]
- b) Define coinage metals? What are the properties of copper? [1+4]
- 6.a) What do you mean by functional group? Explain the properties of methane [1+4]
- b) Define Polymer? Explain the types and uses of rubber. [5]
- 7.a) What happen when: [2x2=4]
 - (i) Steam is passed over red hot iron.
 - (ii) Sodium is heated with ammonia.
- b) Write short notes on: [3x2=6]
 - a Homologous series
 - b Polyethene
 - c Alloys

Good Luck!

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