



DEPARTMENT OF CHEMISTRY
FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA
SECOND SEMESTER EXAMINATION 2018/2019 SESSION
COURSE CODE: CHM327 **COURSE**
UNIT: 2

COURSE TITLE: INDUSTRIAL CHEMICAL PROCESSES II

INSTRUCTION: ANSWER ANY THREE (3) QUESTIONS TIME: 1 1/2 HOURS

- 1(a) Describe the importance of '*reforming*' in the manufacturing of ammonia **[3 Marks]**
- (b) Explain with the aid of schematic diagram, manufacturing of hydrogen tetraoxo sulphate (VI) acid by contact process **[10 Marks]**
- (c) Outline the uses of ammonia **[2 Marks]**
- (d) With the aid of equation, describe the industrial electrochemical synthesis of Chlor-Alkali **[5Marks]**
- 2 (a) Briefly explains the following cells used in manufacturing of Chlor-Alkali:
- (i) Mercury **[2 Marks]**
 - (ii) Diaphragm **[2 Marks]**
 - (iii) Membrane **[2 Marks]**
- (b) Justify the importance of '*purification*' process involved during the production of ammonia. **[5 Marks]**
- (c) State the raw materials utilized in fertilizer production and the various uses of each components. **[7Marks]**
- (d) Enumerate the environmental impacts of ammonia production. **[2 Marks]**
- 3.(a) In a tabular form, outline the chemical constituents of portland and high alumina cement. **(7 Marks)**
- (b) Differentiate between magnetic and electrostatic separation. **(6 Marks)**
- (c) Write short note on vat and heap leaching. **(4 Marks)**
- (d) Outline six physical properties of glass. **(3 Marks)**
4. (a) Discuss the acid resisting cement. **(6.5 Marks)**
- (b) List and explain two types of grinding method employ in mineral processing. **(4 Marks)**
- (c) Differentiate between laminated and tempered safety glasses. **(8 Marks)**
- (d) Give three properties of optical glasses. **(1.5 Mars)**