



NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, Plot 91 Cadastral Zone, Nnamdi Azikiwe Express Way, Jabi -
Abuja.

FACULTY OF SCIENCES
DEPARTMENT OF PURE AND APPLIED SCIENCES
JULY 2017 EXAMINATIONS

COURSE CODE: CHM 417

CREDIT UNIT: 2

COURSE TITLE: IND. CHEMICAL PROCESSES II

DURATION: 2 HRS

INSTRUCTION: *Answer Question 1 (One) and any other 3 questions*

1. (a) Itemize the results achieved via the Calcination process. 5marks
(b) Write short notes on the following:
i. Levigation (2 ½ mks) ii. Liqutation (3marks)
(c) How is superphosphoric acid produced from rock phosphate using;
i. Wet process ? (5marks)
ii. Dry process ? (3marks)
(d) Explain briefly what an electrode is and mention the qualities of a good electrode in electrochemistry. (6 ½ marks)
2. Discuss the four (4) basic operations that are involved in the ammonium nitrate prilling plant. (15 marks)
3. (a) On what basis are the different types of Portland cement recognized? (2 marks)
(b) List and explain the different types of recognized Portland cement. (13marks)
4. (a) With the aid of appropriate equation explain how a pure gold metal can be obtained from the cyanidation process. (7marks)
(b) What are the merits of hydrometallurgy over pyrometallurgy? (3marks)
(c) Use schematic diagram only to explain membrane cell process. (5marks)
5. (a) Discuss the following stages in the Contact process of manufacturing sulphuric acid : i. Oxidation of SO₂ to SO₃
ii. Absorption of SO₃ in sulphuric acid
iii. Dilution of Oleum
(8marks)
(b) Explain in detail the process of Electrolytic refining. (7marks)