



National Open University of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Sciences
Department of Pure & Applied Sciences
January/February, 2018 Examination Questions

CHM417: Industrial Chemical Process II

CREDIT UNIT: 2 Units

TIME: 2 HOURS

INSTRUCTION: ANSWER QUESTION ONE & ANY OTHER THREE QUESTIONS.

QUESTION ONE

- a) Explain the steps involved in metallurgical operations. (19 MARKS)
- b) Discuss heating and roasting method used in the processing Minerals. (6 MARK)

QUESTION TWO

- a) (i) What do you understand by the term 'smelting' (3 marks)
(ii) Discuss smelting as used in metallurgy. (7 marks)
- b) State the advantages hydrometallurgy over pyrometallurgy. (5 Marks)

QUESTION THREE

- a) Explain the Bayer process for the extraction of alumina from bauxite (10 Marks)
- b) How are natural cements manufactured? (5 Marks)

QUESTION FOUR

- a) List the four basic operator involved in the ammonium nitrate prilling plant. (5 marks)
- b) Explain in details, the classes of inorganic fertilizers. (10 mark)

QUESTION FIVE

- a. With the aid of relevant chemical equation, explain how urea can be manufactured.
(6 mark)
- b. Explain in detail how monoammonium phosphate is prepared. (9 mark)