



NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16, Ahmadu Bello Way, Victoria Island

SCHOOL OF SCIENCE AND TECHNOLOGY
October, 2013 Examination

COURSE CODE: CHM 311

CREDIT UNIT: 2

COURSE TITLE: PETROLEUM CHEMISTRY

TIME: 2 HRS

INSTRUCTION: *Answer any 4 questions*

1. (a) What do the following terms mean with respect to accumulation of organic matter?
(i) Autochthonous (ii) Allochthonous (6 marks)
(b) List and discuss three (3) stages of sediments evolution. (9 marks)
(c) Briefly explain the term “hydrates”. (2 ½ mks)
2. (a) Write briefly on the following:
(i) Biogas (ii) Landfill gas (8 marks)
(b) In what ways or areas is Natural Gas employed? List all (3 ½ marks)
and discuss any THREE (6 marks)
3. (a) What is kerogen? (5 marks)
(b) On the basis of the use of Van Krevelen diagram to classify kerogen, kerogen
has been into four types. What are these types? Discuss. (12½ marks)
4. (a) List the constituents of crude oil mixture. (6 marks)
(b) Write short note on each of the following as they relate to crude oil.
(i) Oxygen compounds (3 marks)
(ii) Metallic compounds (3 marks)
(c) Write the structure of the following compounds.
(i) Indole (ii) Quinoline (iii) Benzothiophene (6 marks)
5. (a) What do you understand by the term “Cracking”? Explain. (6 marks)
(b) List the processes that can be employed in the separation of crude oil into various
components. (6 marks)
(c) Write short note on the following:
(i) Hydrocracking (ii) Steam cracking (iii) Absorption and Stripping (6 marks)
6. (a) Explain the following terms:
(i) Methanation (3½ mks)
(ii) Haber Process (5 marks)
(b) Discuss the uses of ammonia. (6 marks)
(c) Write briefly on the production of Urea. (3½ marks)