



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND, LAGOS
School of Science & Technology
JANUARY/FEBRUARY 2013 EXAMINATION

CHM 311 -Petroleum Chemistry

TIME: 2hours

Instruction: Answer 4 questions only

1. (a) Discuss the various ways of removing acid gas from natural gas (7.marks)
(b) Write short notes on the following (i) Natural gas liquids (ii) Gas hydrates (iii) Liquefied Natural Gas (7½ marks)
(c) Why must moisture be removed from natural gas (3marks)

2. (a) What are the problems associated with the storage and transportation of the various gas products?(6 marks)
(b) Write briefly on the fractional distillation of petroleum (7½ marks)
(c) What are the two areas of specialisation of reservoir engineers? (4 marks)

3. (a) List the various classes of crude oil. Discuss four of these classes in details.(11marks)
(b) Explain the following terms: (i) Stranded gas (ii) Physically stranded gas (4marks)
(iii) Economically stranded gas.
(c) What is the difference between conventional and unconventional gas? (2 ½ marks)

4. (a) Define or explain the following terms: (i) Visbreaking (ii) Steam cracking (iii) thermal reforming(6 ½ marks)
(b) List the various methods of altering molecular structure in crude petroleum (3marks)
(c) Write short notes on each of the following terms: (i) Upstream Oil Sector
(ii) Downstream Oil Sector (iii) Oil tanker (iv) Pipeline transport (8marks)

5. (a) List four uses of methyl chloride (4 marks)
(b) Write briefly on the Haber process. (5 marks)
(c) Discuss briefly the potential market for Nigerian gas (8 ½ marks)
6. (a) Write briefly on the production of methanol(6 marks)
(b) Write briefly on the production urea (4marks)
(c) Discuss the various uses of urea. (7 ½ marks)