National Open University Of Nigeria
Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja
Faculty of Science

October/November 2016 Examination

COURSE CODE: CHM 311
COURSE TITLE: PETROLEUM CHEMISTRY
CREDIT UNIT: 2
TIME: 2 HRS
INSTRUCTION: ***Answer any 4 questions***

1. (a) What is a fault and how does it occur? (4mks)
   (b) State the reasons for which a gas reserve can be economically stranded. (6mks)
   (c) Differentiate between conventional and unconventional natural gas. (1½ mks)
   (d) List the six main categories of natural gas. (6mks)

2. (a) Why can it be said that simple distillation is not efficient enough to separate crude oil? (4 ½ mks)
   (b) Describe briefly the primary refinery process of crude oil. No specifications required. (9 mks)
   (c) Identify the main types of hydrocarbons present in crude oil. (4 mks)

3. (a) Discuss the methods for mitigating the effects of contaminant metals on FCC feed stock catalyst. (15 mks)
   (b) Enumerate the desirable properties of an FCC catalyst. (2 ½ mks)

4. (a) How are light products obtained from Gasoline vapours generated in a fractionating tower? Discuss. (9mks)
   (b) Mention the various streams of natural gas liquids and state the use of each of them. (6 mks)
   (c) Give one difference between the following:
      (i) vacuum distillation and fractional distillation (1 ½ mks)
      (ii) fractional distillation and simple distillation (1mk)

5. Write short notes on each of the following:
   (i) Oil in place (10 mks) (ii) Formation Volume Factor (7 ½ mks)

6. (a) Discuss the major components of the petroleum industry. 12mks
   (b) Why should moisture be removed from natural gas? 2 ½ mks
   (c) Highlight ways in which hydrates can be removed from natural gas. 3mks