NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
SEPTEMBER/OCTOBER 2015 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: CHM 311

COURSE TITLE: PETROLEUM CHEMISTRY

CREDIT UNIT: 2
INSTRUCTION: ***Answer any 4 questions*** **DURATION: 2 HRS**

1. (a) How would you describe the following terms?
(i) Kerogen (ii) Allochtonous (iii) Autochtonous (1 mk each)
(b) Write short note on Metagenesis. (5 ½ mks)
(c) State the merits of the use of liquid methane as jet engine fuel? (5 mks)
(d) How are oil wells characterized on the basis of their purpose? (4mks)

2. Explain the following:
(i) Oil in place (10 mks) (ii) Formation Volume Factor (7 ½ mks)

3. Write extensively on each of the following in relation to determining the properties of crude oil. (i) Salt content (5 ½ mks) (ii) Sulphur content (6mks)(iii) Pour point (6mks)

4. (a) List six(6) main categories of unconventional natural gas. (6 mks)
(b) Can a gas reserve be economically stranded? If yes, how? (4 mks)
(c) Precisely identify the various ways of Natural gas formation. (6 mks)
(d) Mention a difference between conventional & unconventional natural gas. (1½mk)

5. (a) How would you explain the term "Cracking"? (6 mks)

(b) Itemize three methods by which acid gases can be reduced or removed from Natural gas (3 mks)
(c) Why is moisture removed from Natural gas? (2 ½ mks)
(d) Natural Gas Liquids are normally fractionated into three (3) streams. List and mention the use of each stream. (6mks)

6. (a) How would you explain the following:
(i) Petroleum (5 ½ mks)
(ii) The Carbon Cycle (10 mks)
(b) What is Biomass? (2 mks)