



**ELIZADE UNIVERSITY**

**ILARA-MOKIN**

**ONDO STATE**

**FACULTY: BASIC AND APPLIED SCIENCES  
DEPARTMENT: PHYSICAL AND CHEMICAL SCIENCES  
SECOND SEMESTER EXAMINATIONS  
2016/2017 ACADEMIC SESSION**

**COURSE CODE: AGY 401**

**COURSE TITLE: PETROLEUM GEOLOGY**

**DURATION: 2 Hrs 30 minutes**

A handwritten signature in black ink is enclosed within a rectangular box.

**HOD's SIGNATURE**

**TOTAL MARKS: 60**

**Matriculation Number: \_\_\_\_\_**

**INSTRUCTIONS:**

1. Write your matriculation number in the space provided above and also on the cover page of the exam booklet.
2. This question paper consists of a cover and three other pages
3. Answer all questions in Section A in the spaces provided and two (2) questions from Section B in the exam. booklet.
4. At the end of this examination, place the question paper inside the exam. booklet and submit with the booklet.

**ELIZADE UNIVERSITY, ILARA MOKIN**  
**DEPARTMENT OF BASIC AND APPLIED SCIENCES**  
**FIRST SEMESTER EXAMINATIONS 2016/2017**

**COURSE CODE:** AGY 401

**CREDITS:** 2

**COURSE TITLE:** PETROLEUM GEOLOGY

**TIME ALLOWED:** 2HRS 30mins

**INSTRUCTION;** Answer all questions in part A in the spaces provided on question paper. In part B, answer any two questions.

**PART A.**

1. Primary porosity in clastic reservoir rocks is lost through the following processes;  
i)..... ii).....whereas in carbonate reservoirs porosity can be enhanced through i)..... ii).....
2. Explain the relationship between capillary pressure and the following parameters with respect to hydrocarbon migration and accumulation:  
i) As interfacial tension increases, capillary pressure .....  
ii As radius of the pore increases, capillary pressure.....  
iii) As the rock becomes water wet, capillary pressure .....
3. List the source rock parameters that can be used for assessing the quality of organic matter.....
4. Compare the elemental composition of crude oil and asphalt  
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.....  
.....  
.....
5. Name one American and one Dutch Oil Exploration and Producing companies in Nigeria  
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6. The current price of Nigeria crude oil in the international market is  
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7. API is very useful for determining the quality of oil and its price. Define it and provide the formula  
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8. Enumerate the characteristics of the naphthenes and give one example.....

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9. Enumerate the characteristics of tar sand.....

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10. The major activities of the down stream sector of the oil industry is exploration and production. True or False ? .....

11. List three types of secondary porosity in carbonate reservoirs

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12. List three quantitative information that can be obtained from MWD logs in petroleum exploration and production .....

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13. List four main contributors of organic matters in the sediments.....

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14. Products of the diagenesis of organic matter during burial are

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15. State three evidences in support of organic origin of hydrocarbon.

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PART B.

1a) Discuss the term 'Vitrinite Reflectance' and its geological significance in petroleum exploration.

b) Comment on the important geological processes that control organic matter accumulation and preservation in a source bed.

2a).Discuss the concept of primary migration

b) Define a trap. With good illustration, describe the genesis of salt diapiric trap and highlight their salient features. Comment on their entrapment potential and seal risk.

3a) With good illustration discuss the role of texture on the quality of clastic petroleum reservoirs. What are the factors that control the texture of reservoir?

b. Describe the principles and applications of Self Potential (SP) log in subsurface exploration.

4. Discuss the geology and petroleum geology with respect to petroleum reservoir, source rock and trap of the Niger Delta Basin, Nigeria.