



**FACULTY OF ENGINEERING**  
**END OF SEMESTER EXAMINATIONS - APRIL 2025**

**PROGRAMME: BACHELOR OF PETROLEUM ENGINEERING**

**YEAR/SEM: YEAR 1/SEMESTER 2**

**COURSE CODE: PTE1251**

**NAME: PETROLEUM GEOLOGY**

**DATE: 2025-04-24**

**TIME: 2:00-5:00PM**

**INSTRUCTIONS TO CANDIDATES:**

1. Read the instructions very carefully
2. The time allowed for this examination is STRICTLY three hours
3. Read each question carefully before you attempt and allocate your time equally between all the Sections
4. Write clearly and legibly. Illegible handwriting cannot be marked
5. Number the questions you have attempted
6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks
7. Any examination malpractice detected will lead to automatic disqualification.

**DO NOT WRITE ANYTHING ON THE QUESTION PAPER**

## Section A Answer only three questions

### Question 1:

#### True/False Questions:

- a. The common reservoir rocks are sandstone, limestone and dolomites and fractures igneous and metamorphic rocks (....)
- b. Petroleum source rock is defined as a rock that has the capability to generate and expel enough hydrocarbons to form an accumulation of oil and gas (.....)
- c. The common cap rocks are mudstone, shale rock, fine limestone, dolomite and evaporate rock, such as halite (rock salt), anhydrite, gypsum, chert (.....)
- d. The place in reservoir rocks where oil and gas can be barred( closed and locked) from further movement was called trap (.....)
- e. The common source rocks are metamorphic and igneous rocks (.....)

(20 marks)

### Question 2:

- a. What are the systematics analysis used for exploration of oil and gas?

(20 marks)

### Question 3:

#### Short Answer Questions

##### a. Unconventional oil extraction methods can include:

- 1.....
- 2.....
- 3.....
- 4.....

(10 marks)

- b. Describe the occurrence of petroleum (10 marks)

### Question 4:

#### Define the Following Terms:

- a- Gross pay   b- The secondary migration   c- Trap   d- Effective trap   e- Net pay

(20 marks)

## Section B Answer only two questions

### Question 1:

#### Long Answer Question

Describe the Physical properties of petroleum  
(20 marks)

**Question 2:**

**Define the Following Terms:**

a- Petroleum   b- Petroleum Geology   c- Oil Shale   d- Kerogen   e- Vitrinite  
(20 marks)

**Question 3:**

**True/False Questions:**

- a. Potential source rocks are immature sedimentary rocks capable of generating and expelling hydrocarbons, if their level of maturity were higher. (.....)
  - b. Possible source rocks are sedimentary rocks whose source potential has not yet been evaluated, but which may have generated and expelled hydrocarbons (.....)
  - c. Unconventional resources require advanced technologies to extract trapped energy reserves (.....)
  - d. Conventional gas and oil production follows well-established techniques involving standard drilling methods (.....)
  - e. Intracratonic basins develop when rifting ceases, they are commonly large but not very deep (.....)
- (20 marks)

**Question 4:**

**Long Answer Questions**

- a. Describe the migration of petroleum?

(20 marks)