



**KISII UNIVERSITY**  
**UNIVERSITY EXAMINATIONS**  
**SPECIAL EXAMINATION**

**FOURTH YEAR EXAMINATION FOR THE AWARD OF**  
**THE DEGREE OF BACHELOR IN PETROLEUM CHEMISTRY**  
**SECOND SEMESTER 2021/2022**  
**(JULY, 2022)**

**BSPC 428: NATURAL GAS TECHNOLOGY (PAPER 2)**

**STREAM: Y4 S2**

**TIME: 2 HOURS**

**DAY: FRIDAY, 12.00 PM – 2.00 PM**

**DATE: 00/07/2022**

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**INSTRUCTIONS:**

- 1. Do not write anything on this question paper.***
- 2. Answer Question ONE (Compulsory) and any TWO Questions.***

**QUESTION ONE**

- a) Briefly describe the following terms [6 marks]
- Total gas in storage
  - Base gas
  - Compressed natural gas
- b) Give four reasons for an increase in use of natural gas for power generation. [4 marks]
- c) As a petroleum chemist, describe the risks and uncertainties associated with petroleum exploration [6 marks]
- d) Describe the extraction of coal bed methane from coal [4 marks]
- e) Differentiate between associated and non-associated gas [3 marks]

- f) Outline five characteristics of a good fuel [5 marks]
- g) Describe three dehydration processes for natural gas. [9mks]
- h) Outline three natural gas pipeline safety precautions [3 marks]

**QUESTION TWO**

- a) Discuss the applications of underground storage of natural gas. [8marks]
- b) State three effects of acid gas in liquefied natural gas. [3 marks]
- c) Outline four occupational health and safety issues associated with LNG facilities operations. [4 marks]

**QUESTION THREE**

- a) Describe the liquid absorption process for gas conditioning [12 marks]
- b) State three effects of acid gas in LNG [3 marks]

**QUESTION FOUR**

- a) Define working gas. [2 marks]
- b) Describe three sites suitable for underground storage of natural gas. [9 marks]
- c) Outline four uses of underground storage of natural gas. [4 marks]