



KISII UNIVERSITY
UNIVERSITY EXAMINATIONS

FOURTH YEAR EXAMINATION FOR THE AWARD OF
THE DEGREE OF BACHELOR OF SCIENCE IN PETROLEUM CHEMISTRY
SECOND SEMESTER 2021/2022
(FEBRUARY-JUNE, 2022)

BSPC 428: NATURAL GAS TECHNOLOGY PAPER 2

STREAM: Y4 S2

TIME: 2 HOURS

DAY: WEDNESDAY, 12.00 PM – 2.00 PM

DATE: 18/05/2022

INSTRUCTIONS:

- 1. Do not write anything on this question paper.***
- 2. Answer Question one and any other TWO Questions.***

QUESTION ONE (40MKS)

- 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. [4marks]

- 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. [9 marks]
- h) Outline three natural gas pipeline safety precautions. [3 marks]

QUESTION TWO (15MKS)

- a) Discuss the applications of underground storage of natural gas. [8 marks]
- 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 (15MKS)

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

QUESTION FOUR (15MKS)

- 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]