

BOWEN UNIVERSITY, IWO, OSUN STATE
COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE
INDUSTRIAL CHEMISTRY PROGRAMME
2022/2023 B.SC DEGREE FIRST SEMESTER EXAMINATION

Course Code: ICH 317 **Course Title:** Industrial Raw Materials Resource Inventory

Date: Wednesday 15/02/2023

Credit Unit: 1

Time Allowed: 1 hour

INSTRUCTIONS (a) Answer any **THREE (3)** questions
(b) Answer each question on a fresh page

QUESTION ONE

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| a. Mention various classes of commercial glass | 5 marks |
| b. What is calcination? Briefly describe its operation process | 7 marks |
| c. What are the basic raw materials used in making ceramic products? | 3 marks |
| d. Discuss extensively the major constituents of perfume | 10 marks |

QUESTION TWO

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|--|---------|
| a. Describe the two major common types of paint in Nigeria | 5 marks |
| b. Classify vanishes in paint production industry | 3 marks |
| c. Differentiate between surfactant and detergent | 5 marks |
| d. Highlight basic raw materials used in foam production | 4 marks |
| e. Describe the general preparation of flexible foam | 8 marks |

QUESTION THREE

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|--|---------|
| a. Classify Industries and give two major examples of each in Nigeria | 6 marks |
| b. Highlight the various types of lubricants | 4 marks |
| c. Describe the key additives that should be used to increase the quality of lubricating oil. | 7 marks |
| d. Let us consider two water columns at different temperatures, one being at 40°C and the other at 20°C. As both the water columns are separated by a glass wall of area 1m by 2m and a thickness of 0.003m. Calculate the amount of heat transfer. (Thermal conductivity of glass is 1.4W/mK) | 8 marks |

QUESTION FOUR

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| a. Classify petroleum oil | 5 marks |
| b. Write short note on the following petroleum processes | |
| i. Thermal cracking | |
| ii. Catalytic cracking | |
| iii. Thermal reforming | 10 marks |
| c. Describe main steps of getting usable nuclear materials from ore | 10 marks |