



NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, Nnamdi Azikiwe Expressway, Plot 91, Cadastral Zone, Jabi, Abuja

FACULTY OF SCIENCE

JULY 2017 EXAMINATION

COURSE CODE: CHM 312

COURSE TITLE: Industrial Chemical Processes I

COURSE UNIT: 2 units

TIME: 2 hours

INSTRUCTION: Answer *Question 1* and *any other three (3) questions*

Q1.

a) Explain five characteristics of explosives (5marks)

b) i. State the 2 (two) bases for classification of explosives (2 marks)

ii. What is a flavouring agent? (1 mark)

iii. Outline the two major types of flavouring agent (2 marks)

c) With the aid of chemical equation, discuss the synthesis of vanillin from petrochemical raw material guaiacol.

(7 marks)

d) Define the term pesticide and give two examples (2 marks)

e) Describe the chemical structure of sulfoxazole (2 marks)

f) Differentiate between microbial and enzymatic fermentation (4 marks)

Q2.

a) State any six uses of Styrene Butadiene Rubber (SBR) (3 marks)

b) Explain the manufacturing process of Wine (10 marks)

b) State the relevance of chromophore and auxochrome in dyeing process (2 marks)

c) Q3

a) Discuss the production process of dyes (7½ marks)

b) Write the structural formula of styrene butadiene rubber (3½ marks)

c) Outline four(4) uses of polyethylene (4 marks)

Q4

- a) Explain the term copolymer and give one example. (3 marks)
- b) Differentiate between thermoplastic and thermoset polymers (5 marks)
- c) State five applications of polymers. Give specific examples (7 marks)

Q5

- a) Enumerate and explain six applications of adhesives. (6 marks)
- b) Describe the industrial production of penicillin (7 marks)
- c) Write the chemical structure of penicillin (2 marks)