



NATIONAL OPEN UNIVERSITY OF NIGERIA
DEPARTMENT OF PURE AND APPLIED SCIENCES
SEPTEMBER, 2020_1 EXAMINATIONS

COURSE CODE: CHM 312

CREDIT UNIT: 2

COURSE TITLE: INDUSTRIAL CHEMICAL PROCESSES I

TIME: 2 HRS

INSTRUCTION: *Answer question 1 and any other 3 questions*

QUESTION ONE

- (a) What is the importance of Styrene Butadiene Rubber? 6mks
- (b) In tabular form, differentiate between Microbial and Enzymatic Fermentation. 4mks
- (c) What quality(ies) of wine is/are determined by the grape type? 2mks
- (d) State the basic difference between the production of Red wine and White wine. 2mks
- (e) LDPE versus HDPE, which is better for film packaging? Give your reasons. 2 ½ mks
- (f) State the three most important steps in pesticide production(s). 3mks
- (g) In what are the following applied;
 - i. Isobutylene
 - ii. Polyvinyl acetate
 - iii. Polyurethane 3mks
- (h) Using balanced chemical equation only, show the production of Benzaldehyde from Toluene. 2 ½ mks

QUESTION TWO

- (a) With the aid of chemical structure only, differentiate between aspirin and penicillin. 5mks
- (b) Polymers are classified based on
 - i. Their response to heating
 - ii. Nature of Monomers.

With necessary examples, explain how these are done. 10mks

QUESTION THREE

Stoichiometrically show how Trimethoprim is produced. 15 mks

QUESTION FOUR

- (a) Use chemical equation only to explain Rhodia's two steps Vanillin production. 7mks
- (b) Define the term Flavour. 2mks

(c) Enumerate the advantages of emulsion polymerization process. 6mks

QUESTION FIVE

(a) To make white wine ready for consumers, explain what you must do after fermentation. 10mks

(b) What is the role of the following?

- i. Larvicides
- ii. Desiccants
- iii. Ovicides
- iv. Avicides
- v. Nematicides 5mks