



NATIONAL OPEN UNIVERSITY OF NIGERIA
DEPARTMENT OF PURE AND APPLIED SCIENCES
2021_2 EXAMINATION 45675

COURSE CODE: CHM 304

CREDIT UNIT: 2

COURSE TITLE: COLOUR CHEMISTRY AND TECHNOLOGY

TIME: 2 HRS

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

QUESTION 1

[25MARKS]

- 1a) Why are substances opaque and transparent **5marks**
- b) Discuss vividly the two methods of producing colours **5marks**
- c) Explain how the following mordents' can be used and state their effects ; Alum, Chrome, Tara powder, Tartaric acid and Tin **5marks**
- d) Mention and explain the five types of synthetic dye that can impart colour on cotton materials **5mks**
- e) What are the economic importance of overflow dyeing machine **5marks**

QUESTION 2 [15MARKS]

- 2) Discuss why the straw appears bent when immersed inside a glass of water **5 marks**
- b) Give the characteristics features of pigments **7marks**
- c) Explain using examples the various types of pigments **3marks**

QUESTION 3 [15MARKS]

- 3a) Outline using examples the kinds of natural pigments **6marks**
- b) Clearly differentiate between organic and inorganic pigments **4marks**
- c) Explain the specific uses of the luminescent pigments in security printing **5marks**

QUESTION 4 [15MARKS]

- 4a) Classify natural inorganic pigments according to its various types **3marks**
- b) Enumerate the principal modes of classification of dyes **6marks**
- c) Attempt a classification of fibres according to origin giving typical example of each **6marks**

QUESTION 5 [15MARKS]

- 5a) Distinguish clearly the examples of polymers used as plastics and those used as fibres in a tabular form **5marks**
- b) Give the characteristics features of hydroxyethyl cellulose **5 marks**
- c) What are the special features of pad batch dying process **5marks**