



NATIONAL OPEN UNIVERSITY OF NIGERIA
DEPARTMENT OF PURE AND APPLIED SCIENCES

APRIL/MAY, 2019 EXAMINATIONS

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

- 1 (a) Define colour (2 marks)
- (b) Name the primary colours that are needed to produce the following secondary colours:
Violet; Black: (2 marks)
- (c) Write the structures of Betalian pigment (2 marks)
- (d) Give 3 key features of organic pigments (3 marks)
- (e) What are auxochromes? (2 marks)
- (f) List three grades of paper that can be dyed (3 marks)
- (g) What are natural dyes (2 marks)
- (h) List three dyeing materials (3 marks)
- (i) Write short note on polyvinyl chloride (3 marks)
- (j) Give three applications of poly urethane (3 marks)

TOTAL MARK: 25 MARKS

Question 2

- 2(a) Outline 5 characteristics features of polyamide (nylon) 5 marks
- (b) Write the balance equation to show the synthesis of polypropylene from the monomer propylene 4 marks
- (c) With the aid of chemical structure define each of these
Isotactic polypropylene 3 marks
Atactic polypropylene 3 marks

TOTAL MARK: 15 MARKS

Question 3

- 3. (a) Give a list of three types of pigments you know 3 marks
- (b) Enumerate five limitations of natural pigments 8 marks
- (c) Define pigment 2 marks
- (d) List four factors that affect the choice of pigment 2 marks

TOTAL MARK: 15 MARKS

Question 4

- 4 (a) What is dye? **2 marks**
(b) In a tabular form, discuss the differences between dyes and pigment under the following headings. Solubility, product resistance, chemical composition, Imparting of colours and structure during the application process **10 marks**
(c) List 3 important applications of pigments **3 marks**

TOTAL MARK: 15 MARKS

Question 5

- 5 (a) List 4 different types of natural fibers **4 marks**
(b) Discuss the extraction of fibers **9 marks**
(c) What are secondary colour **2 marks**

Total 15marks