



NATIONAL OPEN UNIVERSITY OF NIGERIA
DEPARTMENT OF PURE AND APPLIED SCIENCES

2021_1 EXAMINATION 1234

COURSE CODE: CHM304

COURSE TITLE: COLOUR CHEMISTRY AND TECHNOLOGY

INSTRUCTION: Answer question 1 and any other 3 questions

CREDIT UNIT: 2

TIME: 2 HRS

QUESTION ONE [25MARKS]

(1a) We see colour with the sensors in the retina. Explain vividly the principles with emphasis on the functions of the followings

- (i) Rods
- (ii) Cones

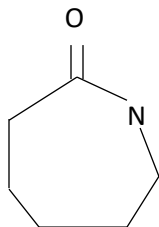
(9 Marks)

(1b) List any three types of high frequency colours you know

(1 ½ Marks)

(1c) Describe the formation of Nylon 6, 6 structurally from

- (i) Monomers adipoyl chloride and hexamethylene diamine
- (ii) Monomers adipic acid and hexamethylene
- (iii)



(4 ½ Marks)

(1d) Write short notes on the following synthetic polymers

- (i) Olefins
- (ii) Aerylics

(10 Marks)

QUESTION TWO [15MARKS]

(2a) Why do a lot of objects reflect light (colour)? Give detail explanations.

(3 Marks)

(2b) Explain the principles behind coloured objects.

- (i) Absorbing light (Absorbtion)
- (ii) Transmitting light
- (iii) Refracting light

(9 Marks)

(2c) Write an explanatory notes on

- (i) Polyesters
- (ii) Polyamide

(3 Marks)

QUESTION THREE [15MARKS]

(3a) Write short notes on

- (i) Additive primary colours
- (ii) Subtractive primary colour

(11 Marks)

(3bi) List five application of subtractive primary colours

(3bii) Mention two differences between “printing primaries” and “painting primaries”

(4 Marks)

QUESTION FOUR [15MARKS]

(4a) Classify the following colours Classify the following colours: Blue, Red-green, Red-orange, Blue-yellow, Yellow, Orange, Black, Magenta, Purple, Indigo, Red-violet, and Yellow-green into

- (i) Additive primary colours
- (ii) Subtractive primary colours
- (ii) Additive secondary colours
- (iii) Subtractive secondary colours
- (iv). Tertiary colours

(7 ½ Marks)

(4b) List two effects of each of the following colours on our homes, workplace and environment.

- (i) Green
- (ii) Blue
- (iii) Yellow

QUESTION FIVE [15MARKS]

(5a) Discuss the constituents of natural inorganic pigments

(10 Marks)

(5b) Most industries prefers inorganic pigments (i.e. considered it better) over its organic counterparts. Discuss elaborately the reasons for this.

(5 Marks)