



NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
SEPTEMBER/OCTOBER 2015 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: CHM 421

COURSE TITLE: HETEROCYCLIC CHEMISTRY

TIME: 2 HRS

INSTRUCTION: Answer any 4 questions

1. Draw the chemical structures and state the uses of the following heterocycles:
i. Sertoconazole (8mks) ii. Raloxifene (9 ½ mks)

2. Describe and outline the Reissert synthesis for Benzopyrrole. Show chemical Equations. 17½mks

3. (a) How is 2-hydroxybenzaldehyde involved in the synthesis of Coumarin? Include the reaction scheme. 14 ½ mks
(b) Identify an important physical property of Coumarin and explain its importance. 3mks

4. (a) Show schematically the reaction of Quinoline with fuming Nitric acid in concentrated sulphuric acid. 12mks
(b) Explain briefly the general properties of Quinoline. 5 ½ mks

5. (a) Describe and show schematically the synthesis of Nicotinic acid from Quinoline. 11 ½ mks
(b) List two medical applications of Niacin. 2mks
(c) Enumerate four medicinal applications of Quinine. 4mks

6. Write the chemical structures of the following compounds:
i. 2-aminoquinoline 3mks
ii. Benzopyrylium 2 ½ mks
iii. Chromone 3mks
iv. Flavylum 3mks
v. Flavone 3mks
vi. Isoflavone 3mks