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**NATIONAL OPEN UNIVERSITY OF NIGERIA**

**14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS**

**MARCH/APRIL 2016 EXAMINATION**

 **SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE: CHM421 CREDIT UNIT: 2**

**COURSE TITLE: HETEROCYCLIC CHEMISTRY**

**TIME: 2 HRS**

**INSTRUCTION: *Answer any 4 questions***

1. Describe the Reissert synthesis for Benzopyrolle and show its reaction scheme. 17½mks

2. Write briefly on the use of the following and show their chemical structures:

 i. Sertoconazole (8mks) ii. Raloxifene (9 ½ mks)

3. (a) How is Coumarin synthesized from 2-hydroxybenzaldehyde? Include the reaction

 mechanism. 14 ½ mks

 (b) Identify a physical property of Coumarin and state its uses. 3mks

4. Write the chemical structure for the following compounds:

 i. 2-aminoquinoline 3mks

 ii. Benzopyrylium 2 ½ mks

 iii. Chromone 3mks

 iv. Flavylium 3mks

 v. Flavone 3mks

 vi. Isoflavone 3mks

5. (a) Ilustrate schematically the reaction of Quinoline with fuming Nitric acid in

 concentrated sulphuric acid. 12mks

 (b) Highlight the general properties of Quinoline. 5 ½ mks

6. (a) Discuss and show schematically the synthesis of Nicotinic acid from Quinoline.

 11 ½ mks

 (b) Mention two medical applications of Niacin. 2mks

 (c) Enumerate four medicinal properties of Quinine. 4mks