



NATIONAL OPEN UNIVERSITY OF NIGERIA
DEPARTMENT OF PURE AND APPLIED SCIENCES

September, 2020 EXAMINATION

COURSE CODE: CHM 315

CREDIT UNIT: 2

COURSE TITLE: CARBOHYDRATE CHEMISTRY

TIME: 2 HRS

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

QUESTION ONE

- (a) List four types of Galactomannan indicating their compositions and ratio. 8mks
- (b) Is the size of the cyclic hemiacetal ring adopted by a given sugar constant? Explain using examples. 8mks
- (c) Using balanced chemical equation only, distinguish between the oxidation of a D-(-)-ribose with hypobromite and D-(-)-ribose with nitric acid. 9mks

QUESTION TWO

- (a) List four common examples of glycosides and mention their applications. 14mks
- (b) State what happens when acid is added to oxonium moiety. 1mk

QUESTION THREE

- (a) Briefly discuss glycosides on
 - i. Its formation
 - ii. Its naming
 - iii. Responses to reagents
 - iv. Where it is mostly found
 - v. Name given to its sugar and alcohol 13mks
- (b) Briefly discuss the Fischer projection of the anomeric Carbon. 2mks

QUESTION FOUR

- (a) Levulose, Heptoses, Galactose, Dextrose. Using these informations, specify precisely which is ;
 - i. Found in human blood
 - ii. Found mainly in fruits
 - iii. Found in carrots
 - iv. Found in avocados
 - v. Found in honey
 - vi. Most widely distributed in plants
 - vii. Most widely distributed in animals. Also specify its types. 10mks
- (b) What are glycosidases? State its uses and reason for its usage. 4mks
- (c) Glucose is stored in animal tissue by what process? 1mk

QUESTION FIVE

Write extensively on the difference between Pectin and Xanthan gum. 15mks