

question 16. Which of the following reactions of glucose can be explained only by its cyclic structure?

(a) Glucose forms pentaacetate.

(b) Glucose reacts with hydroxylamine to form an oxime.

(c) Pentaacetate of glucose does not react with hydroxylamine.

(d) Glucose is oxidized by nitric acid to gluconic acid.

Solution: (c) The pentaacetate of glucose does not react with hydroxylamine indicating the absence of free -CHO group. This property of glucose can be explained only by its cyclic structure.