

J. C. Bose University of Science and Technology
Sessional Exam, Oct 2023
B. Tech ME (Paper code: BSC 102)

Max Marks: 15

Time: 90 min

All questions are compulsory

Q.1 Find effective nuclear charge for

(2)

- (a) 2p electron in Nitrogen
- (b) 3d electron in Nickel

Or

Explain the following

- (a) Isomerism
- (b) Types of isomerism

Q. 2 Explain followings in detail

(6)

- a. Screening effect
- b. Isoelectronic species
- c. Electron affinity

Or

Explain following in detail

- a. Structural isomerism
- b. Stereoisomerism

Q. 3 Out of Oxygen or Nitrogen, which one has lower first ionisation energy and why?

(2)

Or

Explain stereoisomerism in ethane.

Q.4 Explain electron ionisation energy along with the factors governing it. How it varies along the period and along the group.

(5)

Or

Explain stereoisomerism in n-butane.